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ABSTRACT

Despite the prophecies forecasting their probable disappearance or annihilation, small-scale enterprises have persisted in the Brazilian industrial structure since 1950. To account for the survival of small firms in Brazil, specifically in the state of Sao Paulo, a study examined 100 small firms in three industrial sectors: clothing, mechanical goods, and electronics. Information was gathered on the characteristics of the firms included in the study sample; the socioeconomic characteristics, educational level, and professional experience of the entrepreneurs who run them; the characteristics, background, mobility, and earnings of their employees; and their operational and personnel management practices. Other small- and medium-sized firms were perceived as being a greater threat to the survival of the firms studied than were larger or clandestine firms. Maintaining a high-quality product, meeting customers' needs rapidly, keeping their prices low, and constantly updating or renewing their models were mentioned as the top four strategies of surviving in the marketplace. Perhaps the biggest factor in these companies' ability to survive is their considerable operational flexibility, which they exercise in their selection of a geographic location, their work force, their personnel management policies, and their methods of organizing work. (Appendixes include 59 tables on education, training, and employment patterns in Brazil; the survey instruments used; information on the data used in the study; and a classification of the subsectors of the three industries studied.) (MN)

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IIEP Research Report No. 63

Education, training and employment in small-scale enterprises:

Three industries in São Paulo, Brazil

by Elenice M. Leite
Françoise Caillods

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This study is part of the IIEP research project on 'Education, work and employment', directed by Françoise Caillods

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Education, training and employment in small-scale enterprises

Three industries in São Paulo, Brazil

Elenice M. Leite

Françoise Caillods

A study undertaken jointly by the IIEP and the National Industrial Training Service of SENAI, São Paulo

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CONTENTS

Page

INTRODUCTION 9

PART I : ECONOMY, EDUCATION AND EMPLOYMENT IN BRAZIL 13

Chapter I The Brazilian economy from 1940 to 1983 15

1.1 Brazil's economic development after the second world war and its concentration in São Paulo 15

1.2 The Brazilian economy from 1950 to 1980: the process of industrial development 22

1.3 The Brazilian economy in the early 1980s 30

Chapter II Small-scale enterprises in the industrial structure 41

2.1 The question of scale 41

2.2 Participation and performance - overall analysis 44

2.3 Participation and performance of small firms in different industries 53

Chapter III Education and vocational training 66

3.1 Evolution of the educational attainment of the population and the labour force 66

3.2 The formal education system 70

3.3 Education and the labour market 79

3.4 The system of vocational training 83

3.5 Vocational training for small-scale enterprises 89

Summary and Conclusions to Part I 105

PART II : THE FIRM, THE ENTREPRENEURS AND THE EMPLOYEES 113

Chapter IV The survey 115

4.1 Scope of the research 116

4.2 The target population 119

4.3 Sampling 119

4.4 Field work 125

4.5 An outline of the industries selected 128

Chapter V Profile of the firms 144

5.1 History and present features of the firms 144

5.2 Economic situation and prospects 149

5.3 What the companies do 156

5.4 Technology and organisation 168

5.5 Human resources and the employment structure 178

5.6 Personnel policy 194

Chapter VI The entrepreneurs 206

6.1 Socio-economic characteristics 206

6.2 Level of preparation of enterpreneurs: their schooling and vocational training 214

6.3 Past professional experience 224

6.4 The entrepreneurial experience 229

Chapter VII Employees' profile 239

7.1 Socio-economic characteristics 240

7.2 Employee's educational level and vocational training 247

7.3 Occupational background 258

7.4 Mobility 273

7.5 Earnings 279

Chapter VIII The small firm and its manager: synthesis and conclusion 298

8.1 Operation and management of small firms: a few common factors 298

8.2 Personnel management in small firms 307

8.3 Recruitment of personnel and earnings 309

8.4 The firm and its manager 315

ANNEXES 323/459

INTRODUCTION

Small firms have always played a very important role in employment and production, both in developed and developing countries. However, while the small firm was considered for a long time as a mere link in the development chain - since any small firm might potentially become a large one - recent trends of thought have become interested in such enterprises for their own sake and in the economic and social possibilities which only they can offer. According to these trends of thought, small firms appear to have the advantages of:

- being very labour-intensive in that they employ a large proportion of the labour force and could play an even more important part in employment, particularly in developing countries;
- using little equipment and few sophisticated machines, while elaborating and adapting technologies and management methods appropriate to their needs;
- producing goods for the less-favoured sections of the population but also producing parts or intermediary goods for large firms;
- offering employment opportunities to school-leavers;
- making it possible for them to learn total rather than piecemeal job components; and
- constituting a reserve of skilled and semi-skilled workers.

In face of the worsening economic crisis and employment problems, which affect above all the modern sector and large firms, small firms are more and more being looked upon as a source of job creation, providing some solutions to the problems of unemployment. Training institutions the world over are being asked to pay more attention to the requirements of small businesses. In Brazil, a number of institutions, among them SENAI, have started implementing programmes to assist small scale enterprises and to provide complementary training for their managers and workers.

Very little research, however, exists on the role of education and vocational training in small firms. Most existing studies on education and employment deal with large enterprises. Regarding small firms, a number of questions deserve investigation. For example, how can their managers be trained? Whatever the criteria we use to define small firms, one of their main characteristics is the fact that all decisions regarding management, production and sales are taken by one or two individuals: the managers. What is their actual education and training background? Is there any relationship between the way they were educated and trained and the performance of their firms? What is the specific influence of formal education, vocational training and experience? Existing statistics indicate that small firms employ a high proportion of skilled workers; how have these workers been trained? On the job? In special vocational training institutes?

This study, carried out jointly by the International Institute for Educational Planning (IIEP) and the National Office for Industrial Apprenticeship (SENAI) of São Paulo in Brazil, is an attempt to tackle these questions. More specifically, the study intends to:

- analyse the importance and the role of small firms in the industrial structure and their potential for future development;
- analyse their mode of operation, including their personnel management policy;
- study the educational and professional background of their managers and how these may influence the firms' productivity and success;
- analyse the workers' educational and professional background and their salaries;

- assess the quantitative and qualitative impact of the various existing courses which aim at training either the managers or the workers of small firms.

For SENAI, assisting small enterprises is part of its mandate. Numerous indications exist, however, to show that its services are better known and used by average-sized and large concerns. Preoccupied by this disequilibrium, the institution is trying to take a number of measures which would allow it specifically to assist small firms. Prior to this further research is required to understand how small firms operate and determine their specific requirements.

On IIEP's side, the study falls within the framework of its research project on education, work and employment: the analysis of firms' personnel policies, whose objectives are to analyse the factors that influence the relationship between education and employment and the way such relationships vary between types of firms and the link situation.

The study is composed of two main parts. The first part, entitled "Economy, education and employment in Brazil", puts the analysis of education and employment relationships in small firms within the more general context of economic and industrial development in Brazil over the last ten years. The characteristics of Brazil's industrial development, the role of small firms, and the system of education and training of its industrial manpower are described.

The second part presents the results of a survey undertaken on a sample of 100 small firms in the textile, electronic and mechanic industries in the city of São Paulo, industries characterised by very different levels of technology and a large number of small firms.

Using the definition of SENAI, small firms are defined as those employing between 5 and 99 employees. Firms with less than 5 employees have been excluded for two reasons: first, they only represent a small proportion of employment and production in industry, and secondly, no listing of such firms was readily available and it would have been necessary to carry out a preliminary census prior to our investigation.

The survey concentrates on the firm, its head, and sample of skilled workers. Since 100 firms could hardly be considered as representative of the thousands of small firms in São Paulo, the study has an essentially methodological character. The sample design and the way the survey has been undertaken are described in chapter four. The characteristics of the firms, their mode of operation, clientele, technology and manpower policies, are discussed in the fifth chapter. The sixth chapter is devoted to an analysis of the profile of the firm managers, their socio-economic origins, training and professional background. The analysis of the personal educational and professional characteristics of the workers, as well as their salaries, makes up the seventh chapter. In the last chapter, we try to link the characteristics of different firms, and notably their level of efficiency, with the profile of the firm head, prior to drawing some conclusions on the relations between education, training and employment in small firms.

PART I

ECONOMY, EDUCATION AND EMPLOYMENT IN BRAZIL

The analysis of the relationship between education and employment in small firms cannot be separated from a more global analysis of the evolution, mechanisms and structure of the Brazilian economy and of its educational system.

In this part, we shall briefly outline the process of economic and social development in Brazil since 1940, laying special emphasis on its implications for the industrial sector and, in particular, for small-scale enterprises.

We also analyse some indicators of the presence and activities of small-scale enterprises in the industrial structure, particularly in the last decade, in Brazil, the State of São Paulo and, in some cases, the municipal district of the Capital.

Finally, the educational system of Brazil is described, particularly its technical and vocational training system.

CHAPTER I

THE BRAZILIAN ECONOMY FROM 1940 TO 1983

Brazil's economy has undergone major changes in the last 50 years and the country has developed from a predominantly agricultural society into a major industrial producer. Throughout the period industry has been the country's pace-setter. Rapid industrialisation has been promoted by an import substitution strategy combined, since the mid-1960s, with a policy of intensive export promotion. Roughly one can identify three periods in the country's economic history after the first world war. The first period of rapid industrial growth took place in the 1950s: it was based on import substitution and relied heavily on both state and multinational firms. It was followed in the 1960s by a period of economic crisis and stagnation. A second period of industrial growth - often referred to as the "Brazilian miracle" - started at the end of the 1960s and lasted until 1980-81, when the country was hit by the world recession. Brazil has an enormous economic potential and productive capacity but it also suffers from a number of weaknesses related to the agricultural structure, employment, dependence on multinationals, import-export and last but not least, servicing of foreign debt.

1.1 Brazil's economic development after the second world war and its concentration in Sao Paulo

In 1940 Brazil was a predominantly rural country, with 66 per cent of its economically active population

(EAP) in the primary sector and less than one-third (31 per cent) of its inhabitants in urban centres. In four decades this situation has been reversed: by 1980 agricultural employment had dropped to 30 per cent and the rate of urbanisation had risen to 8 per cent (Tables 1.1 and 1.2).

A similar movement, though at a more rapid pace, occurred in the State of São Paulo: in 1940 São Paulo was already more urban and industrialised than the rest of Brazil, but most of its population still lived in rural areas (56 per cent) and were engaged in agricultural activities (56 per cent). As early as 1950, São Paulo stood out as a predominantly urban state, in terms of both population (53 per cent) living in urban areas and employment (secondary + tertiary = 58 per cent), at a time when the majority of the Brazilian people still lived in rural areas and were employed in agricultural activities (Tables 1.1 and 1.2). By 1980, its population had become 89 per cent urban and rural employment had dropped to 13 per cent.

During those four decades, São Paulo remained constantly in the lead over the rest of the country, thereby securing an increasing share of the country's human and productive resources: in 1980 the State contained about a fifth of Brazil's population and a quarter of its EAP, but it accounted for almost two-thirds of urban employment and nearly a half of employment and the value of production in Brazilian manufacturing industry (Table 1.3).

This process of economic and above all industrial concentration in São Paulo originated in 1930.

Until that date, and from the end of the nineteenth century, São Paulo had been the major coffee producing and exporting centre of Brazil, which was in turn the leading supplier of coffee to the world market at that time. Already, therefore, São Paulo was the link connnecting the Brazilian economy with the rest of the world, and this led to an enormous concentration of wealth in the State.

In addition, coffee, which was exploited according to predominantly capitalistic principles, necessitated the introduction of free labour through European immigration earlier than in the rest of the country; it created a demand for food, goods and services that made São Paulo, even in the 1920s, the country's most urbanised and industrialised State, as well as the largest of the various loosely interconnected regional markets existing in the country.

Coffee therefore led to the development in São Paulo of a genuine "coffee-based capitalist complex", in which "agriculture, transport, industry, trade and finance expanded in a dynamic and integrated way, considerably enhancing the accumulative potential" of the São Paulo economy(1).

The world crisis of 1929 severely hit the coffee-based economy and its representatives in the political field. The 1930 Revolution toppled the coffee oligarchy, and industrial capital - generated and expanded in the heart of the coffee-based economy - moved to the forefront. Concurrently, the national market was unified, politically and physically, owing to the weakening of state autonomy, the elimination of the barriers to interstate trade and the expansion of the road network(2).

The unification of the national market led to a confrontation between the various regional markets, and São Paulo, relying on the infrastructure it had inherited from the "coffee-based capitalist complex", came out on top: from being a major exporter and producer of foreign exchange, it became the centre of the interregional division of labour, leaving to the others the task of supplying raw materials, food and markets for the São Paulo industry. Other states also became industrialised, though mainly in activities related to advantages of location (such as access to raw materials and proximity to the market), while São Paulo "acquired a virtual monopoly of "monopolisable" industrial activities, those in which

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1. CANO, W. 1977. *Raizes da concentraçao industrial em São Paulo*. São Paulo/Rio de Janeiro, Difel. (Corpo e Alma do Brasil, 53).
2. SINGER, Paul. 1973. *Economia politica da urbanizaçao*. São Paulo, Brasiliense/CEBRAP.

Table 1.1

Brazil and State of São Paulo - 1940-80: Population growth

		1940	1950	1960	1970	1980
Total population	Brazil	41 165 289	51 941 767	70 070 457	93 139 037	119 070 865
	São Paulo	7 161 316	9 127 911	12 809 231	17 771 918	25 036 171
Average annual rate of population over the decade	Brazil	2.4%	3.0%	2.9%	2.5%	
	São Paulo	2.5%	3.4%	3.3%	3.5%	
Urbanisation rate*	Brazil	31.3%	36.2%	44.6%	55.9%	67.6%
	São Paulo	44.2%	52.6%	64.1%	81.2%	88.6%

Source: (unadjusted data): F. IBGE - Population Censuses for 1940, 1950 and 1970 and advance estimates for 1980.

* Urban population in relation to the total.

advantages of scale are more important than advantages of location(1).

Regional industrial specialisation and its concentration in São Paulo, already reflected in the data of the 1940 Census, tended to become more pronounced in the following decades, in spite of the series of development policies in the 1960s and 1970s designed to create "regional poles". In the manufacturing sector, for instance, São Paulo accounted in 1960 for 33 per cent of all establishments, 47 per cent of the labour force and 56 per cent of the country's industrial gross output (IGO) and industrial value added (IVA), virtually the same percentages as were recorded in the 1975 Industrial Census (Table I in Annex A).

The State's share in some of the most modern and dynamic branches of industry, especially in terms of output and value added, is over 60 per cent, for example, in mechanical goods, electrical goods, transport equipment, paper and cardboard, rubber, pharmaceuticals, perfumery, plastics, etc. In other branches, the levels of concentration in São Paulo are also high (close to or above 30 per cent). Only in the case of two activities - wood and tobacco - do these levels drop substantially (to less than 20 per cent).

In São Paulo, in turn, the city is the major urban-industrial nucleus, with 43 per cent of establishments, 46 per cent of the labour force, 37 per cent of the output and 44 per cent of the value added of the State's industry, according to the 1975 Census. It may be noted, however, that the polarising influence of the capital was greater in 1960 when the municipality contained 40 per cent of establishments, but accounted for 56 per cent of employment, 51 per cent of the output and 54 per cent of the value added of the State's industry. What had happened in the meantime was not a "deconcentration" of industry but an "overflow", owing to

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1. Secretaria de Economia e Planejamento do Estado de São Paulo. Evoluçao das atividades economicas em São Paulo entre 1930 e 1975, conclusoes. Mimeo 1978.

Table 1.2

Brazil and State of São Paulo - 1940-80: Evolution of the structure of employment *

(in %)

Sector		1940	1950	1960	1970	1980
Brazil	Primary	65.9	59.9	54.0	44.3	30.5
	Secondary	10.4	14.2	13.2	18.3	24.9
	Tertiary	23.7	25.9	32.7	37.4	44.6
	Total (100%)	14 758 598	17 117 362	22 750 028	29 557 224	42 913 825
São Paulo	Primary	58.3	42.3	32.8	20.4	12.7
	Secondary	17.2	24.7	23.2	31.5	38.5
	Tertiary	24.5	33.0	44.0	48.1	48.0
	Total (100%)	2 623 540	3 423 638	4 620 044	6 372 345	10 347 819

Source: (unadjusted data): F. IBGE - Population Censuses for 1940, 1950 and 1970 and advance estimates for 1980.

* Distribution of the economically active population (EAP) by sector of economic activity. EAP - Persons aged 10 or over who were employed for some or all of the twelve months preceding the date of the Census, even if on that date they were unemployed, on leave or vacation, or in prison awaiting trial. Also included are persons aged 10 or over who, on the date of the Census, were seeking employment for the first time.

congestion in the capital, to nearby municipalities generally located in the metropolitan area (Greater São Paulo), merely expanding the boundaries of the industrial zone within the State.

Like the State in relation to the rest of the country, the capital is less specialised in activities tending to have locational advantages (chiefly access to raw materials), for example non-metallic minerals, wood, food and beverages. Moreover, the capital's share is less marked in industries such as transport equipment, rubber and chemicals, requiring large industrial plants. Such installations, dating from the end of the 1950s and the

Table 1.3

Share of the State of São Paulo in Brazil's population, employment and industrial activity - 1940 and 1980

Indicators	Share of São Paulo (%)	
	1940	1980
Total population	17	21
Urban population	25	28
Population aged 10 and over	18	22
Economically active population	15	24
Urban employment (secondary and tertiary)	48	64
Employment in manufacturing industry	38	48
.... output value in manufacturing industry	45	53

Source: (Unadjusted data): F. IBGE - Population Census and Industrial Census for 1940, advance estimates for the 1980 Population and Industrial Censuses - Preliminary results.

early 1960s, tend to be found in neighbouring municipalities, because of the already clear signs of saturation of the basic nucleus at that time.

1.2 The Brazilian economy from 1950 to 1980: The process of industrial development

1.2.1 The 1950s: "Fifty years in five"

After the Second World War, the Brazilian economy fell increasingly under the cyclical influence of industrial performance, especially in the manufacturing sector: when industry was growing, GDP increased; when industry suffered a setback, the economy sagged (Table 1.4).

Table 1.4

Brazil - 1947-83: Growth in gross domestic product (GDP) and in the value added of manufacturing industry

Periods	Average Annual Growth Rate (%) GDP	Value added of Manufacturing Industry
1947-1951	7.0	9.8
1952-1955	5.6	8.9
1956-1961	8.3	11.3
1962-1967	3.7	3.6
1968-1973	10.0	12.5
1974-1980	6.9	7.4
1981	-3.5	-9.8
1982*	0.5	0.06
1983*	-3.3	-7.0

Source: F. IBGE and National Accounts Centre of the Fundacao Getulio Vargas. SEPLAN-SP 1979-1982-1983.

* Estimates

The Federal Government then proposed an accelerated development programme - popularised by the slogan "Fifty years in five". It involved, on the one hand, heavy investment by the public authorities in basic sectors such as the iron and steel industry, petroleum, electric power and road-building. In addition, incentives were given through economic and financial policy measures for the establishment - largely by means of foreign capital - of industries producing consumer durable goods (such as cars and household electrical appliances), capital goods (lorries, tractors, ships, machines and equipment) and intermediate goods (cellulose and paper, rubber and various chemical products).

Between 1956 and 1961, the capital goods and consumer durable industries grew at average annual rates of 27 and 24 per cent respectively, spearheading the process of industrial development, together with the industries producing intermediate goods (Table 1.5).

In fields such as transport equipment, mechanical goods and electrical goods - the new vanguard of industrial expansion - investment grew at annual rates of 80, 43 and 38 per cent respectively between 1955 and 1959, while the average rate for manufacturing industry stood at 22 per cent.

The structure of industry then began to change. In 1950 over one-half of employment (53 per cent) and of the value added in industry (58 per cent) was generated by the pioneer sectors of national industry, such as textiles, clothing and footwear, food and beverages, in most cases producing non-durable consumer goods. By 1960 the share of these industries in both production and employment had fallen to 42 per cent and continued to decline in the following decades. During the same period, "vanguard" sectors such as metallurgy, mechanical goods, electrical goods, transport equipment and chemicals increased their share from 18 to 26 per cent in employment and from 21 to 33 per cent in the industrial value added, a trend which continued in the following years (Table I.2 in Annex A).

These activities were largely based on investments of foreign capital, introducing more advanced capitalist patterns of organisation and production techniques into

Brazilian industry. As a result, the new industrial sectors showed from the outset "typical features of large-scale industry, established and run through the concentration and centralisation of capital and the participation of international conglomerates (...)(1).

Table 1.5

Brazil - 1949-77: Manufacturing industry - rates of output growth by industrial sector

Industrial Sectors	Average Annual Growth Rate in %				
	1949-55	1956-61	1962-67	1968-73	1974-77
Capital goods	11.0	27.0	-2.6	18.1	8.4
Consumer durables	17.1	24.0	4.1	23.6	5.5
Non-durable consumer goods	6.7	6.6	0.0	9.4	4.2
Intermediate goods	11.8	12.1	6.3	13.5	8.7
Total Industry	8.8	11.3	3.6	12.5	6.6

Source: SECRETARIA DE ECONOMIA E PLANEJAMENTO DO ESTADOS DE SAO PAULO. SEPLAN - SP. O exame de politicas economicas sectorias 1979

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1. RATTNER, H. Algumas hipóteses sobra a sobrevivència das pequenas e médias empresas - Revista de Administracão de Empresas - Rio de Janeiro. Fundacao Getulio Vargas No. 22 (4) Oct/Dec.

The industrial sector thus achieved a genuine "leap forward", in terms of both the stock of capital and diversification of the structure of production. The launching of new products (usually substitutes for imported goods) went hand in hand with changes of process (through imports of technology)(1), which paved the way for greater diversification of Brazilian industry, especially in the above-mentioned sectors: capital goods, consumer durables and basic intermediate inputs.

1.2.2 The stagnation of the 1960s

In the 1960s or, more specifically, in the period 1962-67, the Brazilian economy recorded what did not turn out to be its weakest post-War performance only because the

---

1. "Changes of process" and "new products" are two basic types of technical innovation that broadly account for the dynamics of the industrialisation process because of their contrasting and largely complementary effects: in general terms, the "change of process" leads to an increase in productivity, thus "reducing the total quantity of social work required to produce one and the same quantity of values in use. If it does not achieve this result it is not economically viable (...). Consequently, the net end result of introducing any kind of 'change of process' is to reduce the level of employment, at least in the capitalist sector of the economy. The consequences of introducing 'new products' are quite the opposite: they represent an expansion of productive capacity, giving rise to (...) an increase in employment (...). As a result, a development process involving the introduction of 'new products' through substitution for imports must be based on an adequate flow of 'changes of process'. Otherwise, it will depend entirely on the growth (natural or through migration) of the work force." SINGER, Paul. Emprego, produção e reprodução da força de trabalho. Sao Paulo, CEBRAP. mimeo.

crisis of recent years (1981-83) proved to be worse. In the former period, the rate of growth of GDP dropped to 3.7 per cent and that of industrial production to 3.6 per cent, with inflation rising to about 90 per cent in 1964. In was only in 1980 that inflation reached comparably high levels (110.3 per cent - Table I.3 in Annex A) and in 1981 that the economy dropped to comparably low levels (-3.5 per cent for GDP and -9.8 per cent for industrial production - Table 1.4).

The 1960s crisis was primarily due to a fall in the rate of investment because of the official economic policy which sought to combat inflation by applying traditional stabilising instruments such as cuts in public spending, abolition of the exchange subsidy for imports, an increase in the tax burden and curbs on lending and wages.

The high rates of investment in the preceding period had led to high levels of idle capacity in the industrial sector and to disequilibrium between the rate of production and the level of demand, reflected in a tendency to accumulate stocks. As a result, levels of investment declined and this led in turn to a reduction in the utilisation of the installed capacity, which aggravated the vicious circle of economic deceleration.

Not all economic activities, however, were hit to the same extent by this deceleration: the hardest hit were the capital goods industry (with negative growth of -2.6 per cent between 1962 and 1967) and the non-durable consumer goods industry (with zero growth); the production of consumer durables and intermediate goods rose, on the other hand, by 4.1 and 6.3 per cent respectively between 1962 and 1967 (Table 1.5).

1.2.3 The 1970s - "Miracle" and deceleration

Two phases can be clearly distinguished in the 1970s:

- 1970-73, a period of vigorous acceleration and strong expansion of economic activity (spearheaded principally by the industrial sector), with lower levels of inflation and of foreign indebtedness; and

- 1974-79, which saw a decline in growth rates, an upturn in inflation and increasing balance-of-payments difficulties.

The first phase was really a continuation of the trend discernible in 1968 and 1969, when the process of economic acceleration got under way, the so-called "Brazilian miracle" of the period 1968 to 1973.

Far from being a miracle, however, the marked expansion of that period had quite concrete practical origins. In a preliminary recovery phase (1968-69), "the government's economic policy measures stimulated a rise in aggregate demand, with monetary and fiscal policy instruments being used to finance consumer durables"(1). The growth recorded in the following stage (1970-1973) "was the result of absorption of the idle capacity remaining from the previous recession. The success of this policy was compounded by a process of income redistribution by means of wage differentials in favour of the middle and upper middle classes, whose growing purchasing power strongly stimulated industrial growth, chiefly in the consumer durable branches."(1)

In addition to these endogenous factors, the favourable international economic situation encouraged growth and diversification of Brazilian exports, which, in turn, together with foreign borrowing, led to the expansion of imports of capital goods and raw materials to meet the demands of the industrial sector.

In the period 1970-73, GDP grew at an annual rate of 12.9 per cent and industrial production by 14 per cent, propelled by the expansion of the consumer durables (25.5 per cent) and capital goods (22.5 per cent) industries. Once again, the process was led by the industries producing transport equipment (motor vehicles) and electric and electronic goods, which grew at an annual rate of 24.5 and 28 per cent cent respectively in the same period (Table 1.6).

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1. RATTNER, H. et al. Pequena e média empresa no Brasil 1963-76 São Paulo, Simbolo - 1979

Table 1.6

Brazil 1967-77 - Manufacturing industry:
Rate of production growth by industrial sector

Industrial Sectors	Average Annual Growth Rate in %		
	1967-69	1970-73	1974-77
Consumer durables	21.9	25.5	5.5
- transport	23.9	24.5	-1.0
- electrical and electronic	17.9	28.0	16.0
Non-durable consumer goods	9.7	9.1	4.2
Capital goods	13.7	22.5	8.4
Intermediate goods	13.7	13.2	8.7
Total	12.6	14.0	6.6

Source: SENAI-DN - 1981, op cit.

In 1974 the "miracle" came to an end and by the following year growth rates for GDP and industrial output had fallen by almost a half (Table 1.7). Throughout the period 1974-80, the Brazilian economy followed a downward trend, although growth in some years - for example 1976 and 1980 - almost led to a revival of the euphoria of the previous phase.

These fluctuations reflect the inconsistencies of official economic policy, which "sometimes adopted a contractionary line (credit restrictions, higher interest rates, control of imports and public spending, etc.) in an attempt to check the inflationary spiral, and sometimes reverted to an expansionary line (encouragement of projects in the leading intermediate and capital goods

Table 1.7

Annual Growth in GDP and of manufacturing industry output 1970-1980

Year	Annual Growth Rate in %	
	GDP	Manufacturing industry output
1970	8.9	10.4
1971	13.3	11.3
1972	11.7	13.6
1973	13.9	15.8
Average 1970-73	12.9	14.0
1974	9.7	7.1
1975	5.7	3.7
1976	9.0	12.9
1977	4.6	2.3
1978	6.0	7.6
1979	6.4	7.0
1980	8.0	7.6
Average 1974-80	6.9	7.4

Source: F. IBGE

sectors, temporary relaxation of credit policy, easier recourse to external financing, opening of subsidised credit lines, etc.) with a view to preventing the country from lapsing into recession"(1).

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1. SENAI-DN. Planejamento e ação do SENAI face a conjuntura economica nacional: revisão das diretrizes e metas. Rio de Janeiro. Documento I; Retrospecto da Economia Brasileira 1981. Mimeo.

The Brazilian model of economic growth in fact contained a number of contradictions, and it was a combination of these from 1974 onwards that helped to bring about its downfall:

- a policy of over-investment in the consumer durables sector combined with a concentrated incomes structure, incapable of ensuring a growth in demand in line with the growth in production and thus aggravating the vicious circle of creation of idle capacity/reduced investment/decline in the level of activity;
- a relatively weak basic sector (capital goods) combined with a modern consumer durables sector, sustained largely by the import of machines, equipment and industrial inputs;
- rising inflation as a result of the growing public deficit, the poor performance of the primary sector - due in turn to distortions in agricultural policy and climatic difficulties - and world inflation, imported into the country through purchases of capital goods and basic inputs (chiefly wheat, fertilisers and oil);
- the strongly adverse international situation, with spiralling oil prices(1) from 1974, exerted further pressure on the Brazilian balance of trade, which was also affected by the unfavourable trend of exports of primary products and manufactures due to the crisis in the developed economies.

1.3 The Brazilian economy in the early 1980s

As already noted, the "Brazilian miracle" came to an end around 1974, although up to 1980 the economy had remained close to its historical growth pattern (6.9 per

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1. As a result of which oil was considered to be primarily responsible for the national and international economic collapse, although in the Brazilian case the oil price rise merely sparked off a latent crisis.

cent per annum) and industry continued to stimulate growth.

In 1980 the economy was still recording a high growth rate, but it was already showing signs of serious internal and external imbalances: inflation passed the three-digit mark (110.3 per cent) and the net external debt increased to 18 per cent, so that the country lost 2.8 million dollars of international reserves. In view of this imbalance, the government was obliged to reduce foreign exchange reserves and resort to international borrowing at a time when international interest rates were beginning to soar.

As a result, the international financial system began to exert pressure on the government to exercise stricter administrative control over the external debt and to stimulate an export-oriented foreign trade policy. This led to a marked reorientation of economic policy, which henceforth concentrated on external trade and replaced moderate expansionist plans - in force until the end of 1980 - by a stabilisation programme and deflation.

This policy was not very successful: its main achievement was the balance-of-trade surplus of 6.5 billion dollars in 1983, much greater than the surpluses recorded in 1981 (1.2 billion) and 1982 (800 million). With regard to inflation, the 1981 index (95.2 per cent) was lower than in 1980, but in 1982 it again came close to the three-digit mark (99.7 per cent) and in 1983 soared to above 200 per cent (211 per cent according to official sources).

In global terms, however, the results of the three-year period were negative: "The average Brazilian lost 11 per cent of his or her income (...), industry shrank by 12 per cent, the country's industrial centre laid off a quarter of its work force and prices increased twelvefold."(1)

It is estimated that in December 1983 close on 16 per cent of the active population (12.3 million) in the

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1. INSTITUTO DE ECONOMIE INDUSTRIAL - FEDERAL UNIVERSITY OF RIO DE JANEIRO - Boletim de conjuntura Industrial - Vol. 4 No. 1 Jan 1984.

country's six metropolitan areas (São Paulo, Rio de Janeiro, Belo Horizonte, Porto Alegre, Salvador and Recife) were unemployed or underemployed (earning less than the minimum wage, doing odd jobs and engaged in other sideline activities).(1)

Analysts regard this as the worst recession the country ever experienced, even worse than the 1930 crisis - the effects of which were relatively less disastrous, as the country at that time was predominantly agricultural (Chart 1.1). Today's crisis is primarily urban and industrial.

There were therefore signs of a radical change in the Brazilian economy in the period 1981-83 with a sharp decline in trade and industry, coupled with a moderate agricultural growth and a marked expansion in the financial sector. In this period financial intermediation grew in terms of proceeds by 13.2 per cent, while agricultural output grew by just 6.3 per cent and industry and trade incurred losses of 12 and 8 per cent respectively (cf. "O Globo", 8 January 1984). Industry is no longer the driving force of the country's economic growth, having ceded that role to the financial sector, which has been expanding as a result of the financial speculation encouraged and stimulated by the high rates of inflation. It is, however, expected that the recession will bottom out in 1984 and that a turnaround will begin in 1985, when the country has a new president and changes are made in the economic policy.

1.3.1 The outlook for the agricultural sector

Close on one-third of the active population of Brazil as a whole and 13 per cent of that of the State of São Paulo are employed in the primary sector, which showed a modest growth of 6.3 per cent in the triennium, and also in 1983 (2.2 per cent). The credit for this favourable performance is primarily due to the government's policy of export promotion.

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1. SUMA Economica. Analise de Conjuntura. February 1984.

However, although the primary sector is vital for the country, from the standpoint of both internal needs and the export effort, it is generally agreed that there is no agricultural policy consistent with those objectives.

From 1967, when rural credit facilities were systematised and consolidated, the subsidy policy served as the basis for the growth of Brazilian agriculture. Since 1982, however, in compliance with official IMF policy, agricultural credit subsidies have begun to be withdrawn as one of the measures designed to reduce the public-sector deficit and stimulate exports. According to the analysts, however, there is inconsistency between these objectives, since the generation of agricultural surpluses for exportation leads to an increase in imports of essential inputs for this sector (fertilisers, herbicides and pesticides are made from imported raw materials). On the other hand, as a result of the withdrawal of the subsidies, Brazilian products lose their competitiveness on both the foreign and domestic markets and are eventually replaced by imports.

On the external front, the sector's performance is strongly influenced by climatic or political contingencies (snowstorms, droughts, floods, revolutions), leading to moderate increases in international prices and/or generating additional demand for certain goods of importance to the Brazilian trade balance.

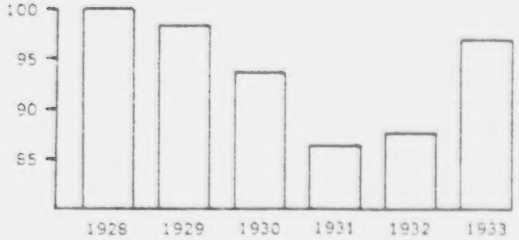
Within the country, the economic recession still affecting employment levels and the purchasing power of the population limits the possibilities for expanding the market. Paradoxically, since 1981 - as already in the past - the government has been importing basic domestic consumer items, such as rice, beans and maize, in an attempt to counter drastic price rises and to ensure that supplies are sufficient to meet the demands of the population. Foodstuffs have actually been the major component in the inflationary process, with prices rising by 220 per cent in 1983, compared with a rise of 180 per cent in the consumer price index. At the same time, as a result of the incentives given to production for the export market (e.g. soya) and/or the special programmes (e.g. sugar cane, Pro-alcohol - an alcohol substitute),

Chart 1.1

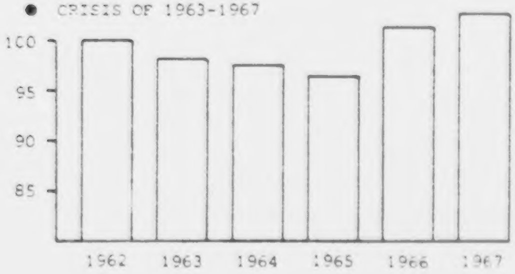
Comparison of Three Major Recessions in Brazil

(Index per capita GDP, giving the value of 100 to the previous year of maximum economic activity)

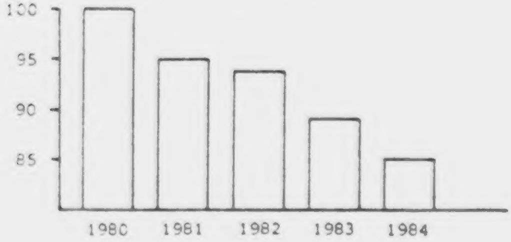
● CRISIS OF 1929-1933



● CRISIS OF 1963-1967



● CRISIS OF 1981-1984 (estimate)



Source: Suma Economica, 1984, op.cit.

the country has been hit by a chronic shortage of food supplies: between 1962 and 1981, the only crop to exceed the 69 per cent population growth coefficient for the period was maize (also an export product), with an increase in production of 109 per cent; rice production increased by only 25 per cent, potatoes by 67 per cent and beans by 47 per cent, while that of cassava declined by 13 per cent.(1)

In this context, the outlook for the agricultural sector is the introduction of an intensive modernisation programme, with farmers depending for their survival on the ability to invest in the production of export items.

1.3.2 The Industrial Sector

Industry, especially manufacturing industry, is the sector hardest hit by the stabilisation programme implemented at the end of 1980, on the one hand because external restrictions call for a transformation of the development model based on foreign indebtedness adopted in the past, and on the other because there are no emergency programmes to cushion the impact on the sector of this readjustment.

The available data show a sharp decline in production and especially in employment, in almost all industrial activities in Brazil. Compared with 1980, only three industries - pharmaceuticals, clothing and footwear, and foodstuffs - increased their production in 1982; on the other hand, industries such as mechanical goods and transport equipment reduced their production to 1980 levels (Table 1.5 in Annex A). The situation is still worse as regards employment: no industry succeeded in 1982 in maintaining employment at the 1980 level; indeed, the majority dropped back to levels lower than in 1975, the only exceptions being paper and cardboard; perfumery, soap and candles; clothing and footwear; foodstuffs and beverages.

The crisis is universal, the only survivors, in

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1. IPARDES. FUNDACAO EDISON VIEIRA. Analise Cojuntural. 6(2), February 1984.

33

relative terms, being industries that provide the population with basic necessities (clothes, food, medical supplies). The greatest losses have occurred in the most modern sectors of industry, such as metallurgy, mechanical goods and rubber. The fall in the level of employment has been greater than that in production, which probably results from a more intensive use of manpower through overtime in some sectors, or from modernisation of equipment in others. It is estimated that in only three years almost one-quarter of the industrial labour force (almost 1.6 million people) lost their jobs.(1)

São Paulo, being the most industrialised state in the country, clearly illustrates the impact of the recession. The decline in production in 1983 was in the order of 8 per cent, a further drop from the decline recorded in 1982 (-1.4 per cent); the loss for the triennium as a whole amounted to 17 per cent. The average ratio of capacity utilisation, which was 76 per cent in 1982, dropped to 73 per cent in 1983.(1)

The relative fragility of Brazilian industry is largely due to the absence of a global and consistent policy for the industrial sector. Although decision-making bodies exist at the national level - the CDE (Economic Development Board) and the CDI (Industrial Development Board), their approach has been sectoral, consisting of the "formulation of policies for individual fields (sectors, specific industries or regions). But there is no single general definition of sectoral priorities. Such policies are therefore usually drawn up on a case-by-case basis, often in a non-institutional way. There are also inconsistencies, principally between stated objectives and those that really govern the implementation of policies. As a rule, the result is a shortsighted, fragmented "policy", for the most part aimed at solving specific situational problems - at present that of the disequilibrium in the country's balance of

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1. SUMA Economica. Analise da conjuntura. February 1984 op. cit.

payments."(1)

The implementation of a global industrial policy is also made difficult by the fact that many industrial sectors are dominated by multinationals. This is one of the results of the policy makers' stress on rapid industrialisation. In the technologically advanced sectors, heavy reliance was placed on state and multinational enterprises.

It was said already that the Brazilian state played a decisive role in the industrialisation process, and assumed responsibility for the setting up and running of key industries that the private sector found less attractive or unviable because they called for a large volume of long-term investment yielding a low return (for example mining, the iron and steel industry, chemicals and basic petrochemicals, oil, public utilities, storage, transport, communication and development banks).(1) Government enterprises thus, in providing inputs and basic services, often generate important external economies which are of particular benefit to the private sector.

Foreign capital has gained a foothold in all the vital industries, namely:(1)

- in the intermediate goods industry, it controls(2) non-ferrous metals, rubber, chemicals and petrochemicals and plays a major role in mining, cement, iron and steel (non-laminated), cellulose and paper;
- in the capital goods industry, it controls the production of tractors, filling and levelling machinery, and tools; industrial and office machines, engines and equipment; electrical and communication equipment; motor vehicles, spare parts and automobile bodies;

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1. SUZIGAN, W. et al - Crescimento industrial no Brasil: incentivos e desempenho recente. Rio de Janeiro, IPEA/INPES. 1974.

2. "Control" is defined as majority ownership of capital or control of technology.

- in other sectors, it controls or plays an important role in pharmaceuticals, hygienic articles and cleaning products, beverages and tobacco.

Under the relevant legislation (Law 4.131 of 3 September 1982), any foreign company is free to enter the country on condition that it registers with the central bank. It is only recently that industrial and financial policy-making bodies have been trying to impose regulations with a view to disciplining or controlling the activities of such companies, for example: giving preference to companies entering the country through joint ventures controlled by private Brazilian companies (as in the computer industry); export commitments; maximisation of equipment purchases in the domestic market.

According to the publication "Quem é Quem" (Visao 31.10.83)(1) the state runs 5 per cent of all enterprises, accounts for 19 per cent of employment, and monopolises almost a half of net assets, a quarter of all revenue and 27 per cent of net profits. The multinationals represent 7 per cent of all companies and account for 14 per cent of employment, 10 per cent of net assets, 22 per cent of revenue and 16 per cent of profits (Table I.6 in Annex A). This picture has changed little since 1980, except for the fact that the state has increased its participation in employment, revenue and profits, illustrating the greater vulnerability of the private sector to the recession.

1.3.3 The Balance of Trade

A considerable change in the structure of foreign trade has come about since the beginning of the 1970s. As far as exports are concerned, it appears that between 1972 and 1982 responsibility for generating foreign exchange

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1. The data refer to 8 336 non-financial medium and large-scale enterprises throughout the country (with net assets of over 200 million cruzeiros at the end of 1982), accounting for almost two-thirds of the country's productive activity.

gradually shifted from the basic products group (e.g. coffee, maize and soya) to manufactured goods (cars, machines and equipment, soya oil), with the share of semi-finished goods remaining virtually stable. In the case of imports, the change occurred as from 1973, when the international rise in oil prices doubled the cost of that item in Brazil's import bill. Until then the main import items had been raw materials and machines and equipment, but from 1973 onwards both those items gradually declined in terms of their share in total import value, while the share in total import value, while the share of petroleum and petroleum products gradually increased.

In 1983 imports were heavily curtailed with a view to achieving the trade surplus pledged to the IMF - 6 billion dollars - which was, in fact, attained. However, there were no substantial changes in the structure of foreign trade (Table 1.8). The value of imports dropped from 17.8 billion dollars in 1982 to 13.9 billion in 1983, but petroleum and petroleum products continued to account for over one-half (57 per cent) of this expenditure. Exports, on the other hand, increased only slightly, from 18.4 to 19.6 billion dollars during the same period, consisting, for the most part (60 per cent), of industrial finished or semi-finished products.

The government's 1984 commitment to the IMF is for a trade surplus of 9 billion dollars, a target that is considered feasible, given the sharp contraction of Brazilian industry, coupled with the economic recovery in the United States, the principal market for Brazilian exports.

Table 1.8

Brazil - 1983: Composition of exports and imports

Exports		Imports	
Composition	%	Composition	%
Basic products	39.3	Petroleum & petroleum products	57.3
Semi-finished goods	8.0	Machines & equipment	15.2
Manufactured goods	50.6	Miscellaneous	27.5
Miscellaneous	2.1		
Total (100%) = US$19.9 billion		Total (100%) = $13.9 billion	
Main Items		Main Items	
Soya (mead, flour, oil)	11.3	Petroleum & petroleum products	57.3
Raw coffee beans	9.3	Boilers, machines & mechanical implements	7.1
Iron ore	7.2	Electrical machines & equipment	4.9
Transport equipment	6.5	Chemical products/ fertilisers	4.0
Manufactured iron & steel products	5.7	Wheat without chaff	4.1
Boilers, machines & mechanical implements	5.8	Cereals	5.4
Orange juice	2.9		
Tobacco leaves	2.2		

Source: FGV - Conjuntura Econômica, No.2, 1984.

CHAPTER II

SMALL SCALE ENTERPRISES IN THE INDUSTRIAL STRUCTURE

Brazil's model of industrial development, which has just been described, has been based mainly on large enterprises. The diversification of production activities has nevertheless paved the way for small and medium-sized firms. Similarly the geographical concentration of industry has proved beneficial in the multiplication of small productive units. Thus the industrialisation pattern of the 1950s, consolidated in the 1970s, led to a specific form of articulation between small and large firms.

This chapter deals with the role and place of small firms in the overall Brazilian industrial structure and in specific industries. Prior to this, we must define what is meant by a "small firm".

2.1 The question of scale

The problem of defining scale and establishing classification criteria immediately arises in any study of small-scale enterprises.

In this preliminary phase of the study, classification of enterprises according to scale is based solely on the number of persons employed and consists of four categories:

- MICRO : up to 4 persons employed;
- SMALL : 5 to 99;
- MEDIUM : 100 to 499;
- LARGE : 500 or more.

The basic reason for adopting this criterion is the total lack of the kind of data, especially from censuses, needed to establish a more accurate system of classification.

It is clear, however, that while the assumption in the above classification that the concepts of "establishment" and "enterprise" are identical is relatively acceptable from the standpoint of small and medium-scale enterprises, it may give rise to discrepancies in the case of large-scale enterprises which frequently consist of more than one productive unit. As this study is concerned with small-scale enterprises, there is less risk of such an error, although it is a limitation to be borne in mind in any comparative analysis of data.

Further restrictions have to be mentioned in connection with the "number of persons employed" variable adopted in most studies as an indicator of the size of enterprises on the assumption that it determines the value added, a basic index used in evaluating an enterprise's performance. Defining the scale of an enterprise solely on the basis of the "number of persons employed" may however result in the grouping together of highly capital-intensive and highly labour-intensive units.

The distortion implicit in the "number of persons employed" criterion and the quantitative criteria in defining the scale of an enterprise (such as sales volume or social capital) is due to the underlying assumption of a purely competitive market in which the production function is identical in the entire industry, and that enterprises pass through various stages of development, until they reach their optimum dimension.(1) In reality,

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1. "... empirical evidence and studies of the history of Brazilian industrialisation seem to invalidate the theory of a gradual and slow growth of enterprises. In most industries, the process of setting up industrial establishments and initiating production took place from the outset in a context of large-scale oligopolistic capital, taking

however, "the industry is not a mere aggregation of functionally identical individual production units (....), nor do small-scale enterprises represent or reproduce the characteristics of large-scale enterprises (....)".(1)

Differences of "scale" therefore imply qualitative changes in the structure of the enterprise and in the extent of the technical and social division of labour in the unit of production.(1) Theoretically, such differences take the following form:

LARGE SCALE ENTERPRISES	SMALL-SCALE ENTERPRISES
- A distinct difference between operational activities and management (planning, co-ordination, etc.)	- Little or no social and technical division of labour
- A hierarchy of functions with a predominance of bureaucratic organisational patterns	- Impossible to grow and expand without a more pronounced division of labour
- Complex system comprising machines, processes and equipment	- No system of machinery and equipment
- Co-operation based on linked and interdependent tasks	- Simple co-operation
- Assimilation and rapid incorporation of technological innovations	- Few or no technological innovations

Source: RATTNER, 1983, Op cit.

Note 1. continued from previous page
advantage of favours and incentives made available through economic policy, in order to impose and strengthen its domination of particular markets" (RATTNER, H., Algumas hipoteses sobre a sobrevivencia das pequenas e medias empresas. Revista de Administraçao de Empresas. Rio de Janeiro, FGV, 22(4): 72-75, Oct/Dec. 1982

The use of quantitative data is therefore valid as a point of departure for analysis, as it enables small-scale enterprises to be situated comparatively in the industrial structure. However, it must be supplemented by "qualitative" data to be obtained through research, taking the points mentioned above into consideration.

2.2 Participation and performance - overall analysis

On the basis of an analysis of census data covering twelve industries(1) - selected for their share of the market and their contribution to changes in the overall configuration of industry - Gonçalves concluded that during the period 1949-70, small-scale enterprises in Brazil performed reasonably well in terms of growth. Although their share in the total output declined (...), their relative share in industry's value added, wages, employment and the number of establishments remained virtually stable ... in spite of the concentration of production in the hands of large-scale enterprises in the 1950s and the economic crisis in the mid-1960s.(2)

This relative stability of small-scale industry in the industrial structure, notwithstanding a high "rate of turnover", was apparently connected with two basic circumstances:

a. the marked diversification of the Brazilian industrial structure in the period under review, especially in the consumer durables industry - chiefly metal products and machinery - paving the way to the proliferation of small-scale

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1. Metallurgy, machinery, electrical and communication equipment, transport equipment, chemicals, pharmaceutical and veterinary products, perfumery, soap and candles, plastic products, textiles, foodstuffs, beverages and tobacco.
2. GONCALVES, Carlos E. do Nascimento. A pequena e média empresa na estrutura industrial brasileira; 1949-79. Campinas, UNICAMP, 2v. /Doctoral thesis/mimeo/1976.

enterprises subordinate to larger corporations;

b. the very rapid process of urbanisation in Brazil, which promoted the development of regional markets and hence opened up areas in which smaller enterprises could compete with the larger ones, especially in areas connected with the production of non-durable consumer goods.

In addition, GONCALVES stresses the "micro-economic efficiency" of small-scale enterprises from a strictly productive point of view, taking into account their gross profit margins and rates of return during the period from 1949 to 1970, and their high rates of investment in 1970. Thus, the weakness of small-scale enterprises would not appear to be a matter of technical or productive inefficiency but above all of "incapacity for self-determination" in the face of large-scale enterprises which, owing to their greater financial and organisational capacity, impose the overall pattern of accumulation.

Studies of other periods and based on other sources bear out Gonçalves' theories. In his study covering 165 small and medium-scale enterprises in the cities of São Paulo, Porto Alegre and Salvador during the period 1963-76, Rattner shows that:

- 60 per cent of enterprises survived during that period;
- their survival or expansion was basically due to relations of dependency on or complementarity to large-scale enterprises.(1)

Census data for the 1970s confirm the general trends noted in the above-mentioned studies. The 1970 and 1975 industrial censuses show (Table 2.1), in the case of Brazil and São Paulo, an upward trend in the share of small-scale enterprises (5-99 persons) for all the indicators used - number of establishments, number of persons employed, gross output and industrial value

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1. RATTNER, H. Coord., Pequena e média empresa no Brasil: 1963-76. São Paulo, 1979, Simbolo. This period was characterised, as we have seen, by a cycle of deep depression followed by expansion.

added. This result is in theory consistent with data relating to a period of accelerated economic expansion (principally 1970-73), which would be conducive to an increase in the number of small businesses. The expansion of small establishments seems to have occurred at the expense of both "micro" enterprises - in line with expectations - and of medium and large-scale enterprises - contrary to expectations. However, as the data refer to "establishments" and not to "enterprises", it is possible that in the course of the decade an accentuation occurred in the trend noted by Gonçalves towards the creation of smaller-scale units linked to large-scale enterprises.

In terms of industrial structure, and the respective share of establishments of different sizes, there was no substantial difference between Brazil and the State of São Paulo: the bulk of employment (52 to 58 per cent) and of manufacturing gross output and value added (65 to 68 per cent) was generated by only 5 to 7 per cent of the large- and medium-scale establishments existing in 1975. Small-scale units, while representing 50 per cent or more of total establishments, accounted for around 40 per cent of employment and a third or somewhat less of the manufacturing gross output and value added - in any case, quite a considerable share of the manufacturing activity of the country and of the State.

For the period 1970-80, the preliminary results of the 1980 Census have to be used, although they do not include establishments employing fewer than five persons or specify the value added. Since a classification identical to that of 1980 is not available, for purposes of comparison with 1970 the data we used from the 1970 Census refer to establishments employing five or more persons, but also having an output amounting to over 640 times the largest minimum salary then prevailing. There is therefore a danger of some distortion in the comparison, especially with respect to the "number of establishments" variable.

On the basis of these data, the trends for the share of small-scale units in Brazil and São Paulo in the 1970-80 period are as follows (Table 2.2):

- a slight decline in relation to the total number

of establishments and gross output;
- a rise in respect of the number of persons employed.

It will be noted that these results are not inconsistent with the data for the period 1970-75, the difference in the trends being attributable to two sets of factors:

- on the one hand, the above-mentioned criteria used for grouping data in the 1970 and 1980 Censuses;
- on the other, the fact that the second half of the decade was a period of economic deceleration, presumably less favourable to the expansion of smaller enterprises.

With regard to the performance of small-scale enterprises since 1970, there is some evidence in the censuses that bears out the findings of studies relating to previous periods.

Three indicators may be used for this purpose:(1)

- average productivity $= \frac{IVA}{EP}$

IVA = value added of persons directly engaged in production
EP = number of persons directly engaged in production

- Gross profit margins $= \frac{GP}{IGO}$

GP = gross profit (gross output value less wages and various costs)
IGO = industrial gross output

- potential capacity for internal accumulation $= \frac{GP}{EST}$

GP = gross profit
EST = number of establishments.

As expected, these indicators show that, both nationally and in the State of São Paulo, at the two points in time considered (1970 and 1975):

- performance levels of small-scale enterprises were lower than those of medium- and large-scale

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1. GONCALVES. Op cit.

Table 2.1
Brazil and São Paulo (1970-75): Manufacturing industry - distribution of establishments, number of persons employed, the total and manufacturing output by size of establishment (in %)

Variables	Scale *	Brazil		Sao Paulo	
		1970	1975	1970	1975
Number of Establishments	Micro	60.8	48.1	48.9	35.7
	Small	36.2	47.2	46.2	57.5
	Medium/Large	4.0	4.7	4.9	6.8
	Total(100%)	160 887	183 824	49 779	59 600
Number of Employees (in thousands)	Micro	7.0	5.6	3.6	2.1
	Small	38.7	41.9	35.4	39.7
	Medium/Large	54.3	52.5	61.0	58.2
	Total(100%)	2 635	3 817	1 289	1 815
Gross industrial Output (in millions of cruzeiros)	Micro	1.7	2.2	2.5	1.5
	Small	31.4	32.8	28.5	30.6
	Medium/Large	66.9	65.0	69.0	67.9
	Total(100%)	116 516	782 698	65 372	437 788
Industrial Value Added (in millions of cruzeiros)	Micro	1.8	2.0	2.0	1.4
	Small	29.7	33.9	26.7	32.1
	Medium/Large	68.5	64.1	71.3	66.5
	Total(100%)	53 277	306 893	30 961	171 528

Source: (unadjusted data): F. IBGE - 1970 and 1975 Industrial Censuses.

* Micro - up to 4 persons employed and/or gross output less than 640 times the largest minimum wage in force during the year; Small - 5 to 99 persons employed; Medium/large - 100 or more persons employed.

enterprises, but the latter were not always ahead of those in the medium range;

- performance levels of São Paulo industry were generally higher than the national average for enterprises of all sizes.

In considering average productivity, however, it is important to note that the performance of small-scale enterprises improved in relation to that of larger corporations in the period under review, that is to say: whereas in 1970 the average productivity of small establishments, as a ratio of that of large establishments, amounted to 64 per cent for Brazil and 57 per cent respectively, from the point of view of gross profit margin, small-scale enterprises in both Brazil and São Paulo recorded a stable performance in the period under review: gross profit margins did not rise above 21 per cent, which shows, on the other hand, that total costs remained in the region of 80 per cent of gross output.

According to the census data, the gross profit margin of large-scale enterprises was greater in 1970 than that of small establishments - about 30 per cent for Brazil and 27 per cent for São Paulo - but by 1975 this advantage had disappeared and the percentages for large and small establishments were almost identical.

It might be concluded from these results that the performance of small-scale enterprises was satisfactory in terms of the trend of productivity and profitability. Of course, it must be borne in mind that the period in question (1970-75), as well as being extremely short for the purposes of any conclusive analysis, was characterised, for the most part, by extremely high rates of economic growth, theoretically more favourable to small businesses. There is no guarantee that the performance of small-scale enterprises remained at these levels during the economic decline in the second half of the decade.

It remains for us to consider the so-called "potential capacity for internal accumulation" of small-scale enterprises which, according to another study, reveals their weakness in comparison to large companies. In effect, the amount of gross profit generated by

Table 2.2

Brazil and São Paulo (1970-75): Manufacturing industry - distribution of establishments, number of persons employed and gross output by size of establishment *

(in %)

Variables	Size	Brazil 1970	Brazil 1980	São Paulo 1970	São Paulo 1980
Establishments	Small	93.0	92.1	90.7	89.6
	Medium/Large	7.0	7.9	9.3	10.4
	Total(100%)	62 627	118 244	25 339	45 718
Number of Employees (in thousands)	Small	42.0	43.6	36.9	39.7
	Medium/Large	58.0	56.4	63.1	60.3
	Total(100%)	2 428	4 650	1 234	2 231
Gross Output (in millions of cruzeiros)	Small	32.1	29.6	29.3	28.1
	Medium/Large	68.9	71.4	70.7	72.9
	Total(100%)	114 182	9 373 571	63 619	5 012 172

Source: (unadjusted data): F. IBGE - 1970 and 1975 Industrial Censuses and preliminary results of the 1980 Industrial Census.

* Only establishments with 5 or more employees (in 1970 and 1980) and/or gross output greater than 640 times the largest minimum wage in force (1970).

small-establishments represents only 1 per cent of that achieved by large companies, and this, according to CTAE, limits the self-financing potential of small companies and/or their capacity for indebtedness to financial entities, hence making it more difficult for them to survive or expand.(1)

Obviously, caution is necessary in interpretating these data - and also the previous data concerning productivity and profitability - as small-scale enterprises are known to have less accurate or less rigorous accounting systems than large corporations. Thus, part of the "financial weakness" of smaller firms may be due to inaccurate records or the omission of accounting data.

Moreover, it is debatable whether the shortage of own capital in small companies is really as dramatic as is claimed by entrepreneurs and entities associated with them, and even by some analysts. There is evidence that barriers to the survival or expansion of small businesses are due less to the scarcity of funds than to the absence of incentives or conditions conducive to growth in a market dominated by large-scale enterprises. In such circumstances, the most rational procedure for any entrepreneur is to diversify investment, channelling profits into other lines rather than ploughing them back into the company. In short, the possibilities for growth and expansion open to small companies do not depend on their self-financing capacity or "access to credit facilities; what really determines whether circumstances are more or less favourable to their survival and prosperity are the conditions and structures of the market, in particular the presence or absence of oligopolistic groups".(2)

According to this approach, the dynamics of small-scale businesses cannot be fully understood by

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1. UNICAMP - CTAE. As pequenas e médias empresas industriais no Estado de São Paulo: seu desenvolvimento recente. Campinas. 1979. /mimeo/.
2. Rattner 1982. Op. cit.

Table 2.3

Brazil and São Paulo (1970-75): Manufacturing industry - productivity, profitability and accumulation capacity, by size of establishment

Year		Size of Establishment	Average Productivity (IVA/EP)		Gross Profit Margin (GP/IGO)	Accumulation Capacity (GP/EST)	
			Value in thousands of cruzeiros*	Percentage		Value in thousands of cruzeiros*	Percentage
1970	Brazil	Total	24.90	85.5	24.3	396.04	3.2
		Small	18.57	63.8	21.0	132.25	1.1
		Medium	26.41	90.7	19.3	2 020.90	16.2
		Large	29.11	100.0	29.6	12 501.57	100.0
	São Paulo	Total	28.71	81.1	25.1	566.80	3.1
		Small	20.05	56.6	21.3	172.12	1.0
		Medium	29.39	83.0	25.6	1 558.86	8.6
		Large	35.40	100.0	27.4	18 114.03	100.0
1975	Brazil	Total	99.00	85.7	22.7	1 661.26	3.0
		Small	81.72	70.8	21.5	637.16	1.1
		Medium	107.19	92.8	24.1	11 431.26	20.4
		Large	115.44	100.0	22.3	56 021.71	100.0
	São Paulo	Total	111.24	91.0	22.5	2 288.65	3.7
		Small	96.63	79.0	21.3	836.16	1.4
		Medium	125.94	103.0	24.8	6 008.26	9.8
		Large	122.24	100.0	20.9	61 310.42	100.0

Source: (unadjusted data): F. IBGE - 1970 and 1975 Industrial Censuses

* = Nominal value; IVA = Industrial value added; EP = Number of persons directly engaged in production; GP = Gross profit (Output less wages and other costs); IGO = Industrial gross output; EST = Establishments

examining global or isolated indicators, or explained by the subjective energy and drive of entrepreneurs; above all else, "it is necessary to investigate and chart out the interrelationships and forms of integration of small, medium- and large-scale enterprises in different sectors".(1) In other words, studies of small businesses should not be confined to single units of production or to the personality or behaviours of entrepreneurs; they must also consider historical and structural circumstances and their implications for entrepreneurial activity.

This approach does not, however, imply an "economic determinism" when studying small enterprises. There is evidence that the profile and personal and family career of small-scale entrepreneurs are bound up with the history of their company, and this calls for a sociological approach to the question of the "social" and "cultural" capital of those individuals. The findings of research on small and medium-scale enterprises indicate that factors such as "social background, type of school attended, marriage and family relations constitute some of the major assets of the successful entrepreneur".(1)

2.3 Participation and performance of small firms in different industries

Since a study of small-scale enterprises must take into account their environment - that is to say, the industrial sector in which they operate, the way they fit into the market and their relations with large corporations - this section presents a number of indicators of the performance of smaller firms by type of industry.

From a theoretical point of view, the functions, place and role of small-scale enterprises in the different sectors of industry depend on the type of market structure. TAVARES and POSSAS(2) have described in

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1. Rattner 1983. Op. cit.
2. TAVARES, M.C. E OUTROS. Estrutura industrial e empresas lideres. Rio de Janeiro, FINEP. 1979. 3v. /mimeo. POSSAS, M. Estrutura industrial brasileira: base produtiva e liderança dos mercados; 1970. Campinas, UNICAMP. /MA thesis/ 1977. /mimeo/.

general terms, five different market structures and the position of small-scale enterprises in each one (Table I.7 of Annex A):

- three of them - pure oligopoly, pure/heterogeneous or mixed oligopoly and heterogeneous oligopoly - are characterised by a heavy concentration of technology in the production process and domination of the market by large foreign companies: they include the so-called high-technology sectors of industry (intermediate products, luxury consumer durables and non-durables). In such structures, small companies are mainly in a subordinate or complementary position with respect to larger corporations, which impose constraints on their survival or expansion; the two other structures - competitive oligopoly and non-oligopolistic - are characterised by lower levels of technology, the presence of Brazilian companies at the top and relative specialisation in the production of finished and semi-finished "traditional" consumer goods. In such cases, small-scale enterprises tend to be "marginal" producers, their performance being restricted by the potential of such markets and the pace of expansion of large-scale enterprises.

The identification within specific industrial sectors of the categories mentioned in the table would obviously require a more detailed analysis of qualitative data than those available from censuses or other existing surveys.

(a) Participation in the industrial structure

An attempt was made to trace the development of the industrial structure of the State of São Paulo and the capital city over the last decade and the participation of small-scale establishments in each branch. The analysis is impaired in some respects by the nature of the data available, e.g.:

- data available for the capital city and relating to the period 1975-80 are not strictly comparable with the census data;(1)

- the analysis is limited in the case of the State to two indicators - number of employees and gross output - and in the case of the capital to only one - wage earners, since the number of establishments variable, though shown in the tables, is seriously distorted in the RAIS data compared with the 1970-80 censuses.(2)

In spite of these shortcomings, the analysis may serve as a useful frame of reference to our study; Table 2.4 shows, for the capital city and the State:

- industries whose participation in employment and/or gross output in 1980 was considered "high", that is to say equal to or greater than 5 per cent.(3)
- industries whose participation, in terms of the same indicators, remained stable or expanded in the last decade;
- industries in which the share of small-scale establishments (5-99 employees) in terms of employment and/or gross output, was above average in 1980;
- industries which recorded a stable or rising proportion of small establishments in the course of the decade.

It may be noted that about 70 per cent of industrial activity in the State and the capital city, in terms of employment and/or gross output was attributable to manufacture of metal products, machinery and equipment

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1. Data from PIS (Social Integration Plan) and RAIS (Annual Report on Social Information - See Annex C.
2. Ibid.
3. Which would broadly correspond to the "ideal" participation of each industry if all industries were equally represented.

Table 2.4

State of São Paulo and the capital city - 1970-80
Change in the industrial structure and participation of small-scale establishments * by industries - summary

Industrial Groups	Industries with a high share (5% or more) in the industrial sector in 1980			Industries whose share in the sector remained stable or increased during the last decade **			Industries in which the share of small-scale enterprises was above average in 1980			Industries in which the share of small establishments remained stable or increased during the last decade **		
	State		Capital	State (1975-80)		Capital (1975-80)	State		Capital	State (1970-80)		Capital (1975-80)
	EP	IGO	IGO	EP	IGO	WE	EP	IGO	WE	EP	IGO	WE
Non-metallic minerals..................10	x						x	x		x	x	x
Basic metal industries.................11	x	x	x	x	x				x	x		
Mechanical goods.......................12	x	x	x	x	x				x			x
Electrical and communications.........13 equipment	x	x	x	x	x	x						x
Transport equipment....................14	x	x	x							x		
Wood...................................15				x	x		x	x	x			x
Furniture..............................16							x	x	x			x
Paper and cardboard....................17					x	x				x		
Rubber.................................18												
Leather and hides......................19				x	x	x	x	x	x	x	x	
Chemicals..............................20		x			x	x	x	x		x		
Pharmaceutical and veterinary.........21 products										x	x	
Perfumery, soap and candles...........22				x		x				x	x	
Plastic products.......................23			x	x			x	x	x	x		
Textiles...............................24	x	x	x					x		x		
Clothing, footwear and woven goods....25	x		x	x		x	x	x	x			
Foodstuffs.............................26	x	x	x			x	x	x		x	x	
Beverages..............................27						x	x	x		x	x	x
Tobacco................................28						x						
Publishing and graphics................29						x	x	x	x	x	x	
Miscellaneous..........................30						x	x	x	x	x		x

Sources: Table I.8 and I.9 in Annex A.
EP = Number of employees; IGO = Gross output; WE = Wage earners.

* with 5 to 99 employees
** Changes of 9.1 per cent not taken into account.

(11, 12, 13 and 14 *) and the traditional block composed of textiles (24), clothing (25) and foodstuffs (26). In the State, a leading role was also played by chemicals (20) and non-metallic mineral products (10), and in the capital city by plastics (23). This structure is consistent with the industrial development trends in the region analysed in the previous chapter.

Not all the industries mentioned, however, recorded a favourable performance in the last decade; in the State, transport, textile and foodstuffs industries lost some of their share in employment and gross output decreased between 1970 and 1980; in the capital city, only plastic, clothing and foodstuffs industries seem to have maintained or increased their share in employment between 1975 and 1980.

The performance of a number of other industries remained stable or improved during the period. Most of these, however, are of relatively minor importance (3 per cent or less) in terms of sectoral activity, except for the industrial groups 20 (chemical goods), 29 (publishing and graphics) and 30 (miscellaneous) in the capital city.

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* Code of industrial groups

10 - Non-metallic mineral products
11 - Metallurgy
12 - Mechanical goods (metal products and machinery)
13 - Electrical and communication equipment
14 - Transport equipment
15 - Wood
16 - Furniture
17 - Paper and cardboard
18 - Rubber
19 - Leather and hides
20 - Chemicals
21 - Pharmaceutical and veterinary products
22 - Perfumery, soap and candles
23 - Plastic products
24 - Textiles
25 - Clothing, footwear and woven goods
26 - Foodstuffs
27 - Beverages
28 - Tobacco
29 - Publishing and graphics
30 - Miscellaneous

Table 2.5

State of São Paulo and municipal district of the capital - 1980
Manufacturing industry - average size of establishments by industries

Industrial Group	1980 Census		State RAIS - 1980		Capital RAIS - 1980	
	Size*	Classification**	Size*	Classification**	Size*	Classification**
10	29	-	24	-	32	-
11	58	+	49	+	46	+
12	67	+	64	+	45	+
13	90	+	107	+	87	+
14	128	+	212	+	114	+
15	25	-	14	-	14	-
16	31	-	20	-	18	-
17	74	+	83	+	63	+
18	80	+	78	+	64	+
19	40	-	26	-	21	-
20	59	+	77	+	62	+
21	89	+	128	+	120	+
22	57	+	52	+	56	+
23	51	+	42	-	41	-
24	67	+	77	+	68	+
25	39	-	23	-	18	-
26	24	-	45	-	60	+
27	42	-	41	-	161	+
28	472	+	305	+	427	+
29	27	-	23	-	31	-
30	43	-	30	-	27	-
Total	49		47		42	

Source: (unadjusted data) F. IBGE - Preliminary results of the 1980 Census and 1980 Employment Survey of the Ministry of Labour - RAIS - (Annual Report on Social Information)

* Number of employees by establishment.

** In relation to the general average: (-) below and (+) above.

Note: Divergences may be seen in the average size of branches depending on the source of data used. This is due to the fact that the census indicates "number of persons employed", while RAIS only gives "wage earners".

As we noted in the last section, these trends were strongly influenced by the recent economic situation. Between 1980 and 1982, the recession affected industry as a whole, but the industries that had previously spearheaded sectoral growth, e.g. the metal products and machinery industry, were worst hit; with regard to employment, few industries recorded a stable or rising trend in 1981 and 1982 - only clothing, perfumery/soap, foodstuffs and beverages, in short, those producing basic subsistence items.

However, it would be premature to assert that because of the recession the pattern of accumulation established over the past three decades has appreciably changed, or that new trends of industrial development have emerged. For that to occur, the crisis would have had to be accompanied by changes in economic policy, which have not materialised.

As far as small establishments are concerned, the industries in which their showing is strongest are not, as expected, the most modern or those in the vanguard of industrial growth (such as the metal and machinery industry, in which expansion occurs through large industrial plants and in a highly oligopolised context). In the State, strong participation by small establishments was recorded in twelve industrial groups,(1) and in the capital city in nine industrial groups.(2) Most of these are characterised theoretically by predominantly competitive or non-oligopolistic market structures, in which small establishments can play a relatively independent or "marginal" role. This is not true, however, of industrial groups 20 (chemical goods), 11 (basic metal industries) and 12 (metal products and machinery), which usually consist of pure or heterogeneous oligopoly, in which small establishments seem to survive in positions of subordination or complementarity to large corporations.(3)

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1. 10, 15, 16, 19, 20, 23 to 27, 29, 30.
2. 11, 12, 15, 16, 19, 20, 23, 25, 29, 30.
3. Obviously, an accurate picture of industrial groups based on the categories set out in Table I.7, Annex A, could only be given by breaking them down into individual industries, a task that lies beyond the scope of this work.

In most of these industries, small-scale enterprises recorded a stable or rising trend during the decade. There are others, however, in which small businesses are less well represented but seem nonetheless to have performed quite well, e.g., transport equipment (14), paper (17), pharmaceuticals (21) in the State, and electro-electronics (13) in the capital city.

(b) Degree of technological concentration

An attempt was made to describe the degree of technological concentration in the different industries, given the importance of that variable - reflecting the degree of participation of large-scale enterprises in sectoral activity - in determining the role and performance of small establishments. The indicator used is the average size of establishments (number of employees/number of establishments) classified according to their position "below" or "above" the industrial average. It was thus possible to determine the greater or lesser degree of technological concentration in the various industries.

Broadly speaking, the resulting classification is consistent with what we know of the structure of the different industries. Thus, the ones with greater than average size establishments are those that are known to be more oligopolistic, mostly "modern" industries such as tobacco (28), pharmaceuticals (21), metal and machinery (11, 12, 13 and 14), chemical goods (20), paper and cardboard (17) and rubber (18). Conversely, the average size of establishments is smaller in "traditional" industries, which are still predominantly competitive, e.g. clothing (25), wood/furniture (15, 16), leather goods (19), publishing and graphics (29), non-metallic minerals (10) and miscellaneous (30).

(c) Average productivity

Turning to the performance of the different industries, an analysis was undertaken of average productivity in general and of small firms in particular. Taken as a measure of a company's "efficiency", average productivity (manufacturing value added/number of persons employed in production) reflects primarily the technological composition of capital or the degree of capitalisation of the enterprise, which directly influences the productivity of the labour force.

Average productivity by size of enterprise was only calculated for the State, on the basis of the 1975 industrial census (the most recent available), which does not give a breakdown for the capital city. In terms of the general average (Table 2.6), the capital city is slightly out of phase with the State, probably because the capital is an older industrial centre, while other centres - especially ABCD, Sorocaba/Campinas and Vale do Paraiba - were based from the outset on modern industries. Thus, in industries such as chemicals (20), rubber (18) and paper (17), the difference in the averages for the capital city and the State are more pronounced, the advantage lying with the latter. Moreover, in most of the so-called "traditional" industries - such as wood (15), furniture (16), textiles (24) and beverages (27) - the average productivity of the capital city is considerably greater than the average for the State. By and large, however, the trends for individual industries are identical in the capital city and the State, clearly as a result of the major role played by the municipal district in São Paulo's industrial activity.

Discrepancies in the level of productivity are much more pronounced between individual industries, which shows the importance of a disaggregated approach, at least at this level: more "modern", oligopolistic industries - such as tobacco (28), chemicals (20), pharmaceuticals (21) and perfumery (22) - attain productivity levels three times higher than the average for the manufacturing industry, while more competitive industries - such as furniture (16), leather (19), textiles (24) and clothing (25) - hover around half the industrial average.

In most industries, the average productivity of small firms is at least 70 per cent of that of large corporations - which would seem to indicate that the performance of small businesses is satisfactory. This is not true in some industries such as wood, paper, rubber, perfumery, beverages, etc., in which the performance of

Table 2.6

State of São Paulo and the municipal district of the capital - 1975
Manufacturing industry - average productivity by size of establishment and industrial origin

	Average productivity - State of Sao Paulo							Average Productivity City of São Paulo	
	Nominal Value (in thousands of Cruzeiros)				Comparison: Large establishments= 100%			Nominal Value in thousands of cruzeiros)	Capital/ State (%)
	Total	Small	Medium	Large	Total %	Small %	Medium %		
10	88.25	78.97	107.44	95.39	92.5	82.8	112.6	98.12	111.2
11	99.08	83.72	103.10	118.56	83.5	70.6	86.9	92.42	93.3
12	102.91	89.94	111.84	108.08	95.2	83.2	103.4	120.52	117.1
13	113.03	116.74	106.26	118.30	95.5	98.6	89.8	104.02	92.0
14	112.47	88.69	107.85	124.06	90.6	71.4	86.9	106.81	95.0
15	75.43	61.17	106.95	-	70.5	57.1	100.0 **	81.93	108.6
16	66.37	55.83	87.40	75.21	88.2	74.2	116.2	72.92	109.9
17	116.49	83.15	117.93	203.70	57.1	40.8	57.8	93.08	79.9
18	148.34	95.45	101.09	250.22	59.2	38.1	40.4	112.96	76.1
19	53.12	56.47	51.84	-	102.4	108.9	100.0 **	51.03	96.1
20	392.17	377.64	509.60	211.95	185.0	178.1	240.4	284.04	72.4
21	374.35	304.97	430.14	247.54	151.2	123.2	173.7	379.10	101.3
22	308.05	183.26	330.22	450.37	68.4	40.6	73.3	303.12	98.4
23	95.34	85.43	98.00	141.52	67.3	60.3	69.2	92.70	97.2
24	65.53	72.79	61.89	62.26	105.2	116.9	99.4	79.93	122.0
25	48.55	49.95	48.04	65.74	73.8	75.9	73.0	52.61	108.4
26	121.67	108.71	148.34	101.48	119.8	107.1	146.1	113.37	93.2
27	168.97	113.74	222.36	267.72	63.1	42.4	83.0	264.72	156.7
28	393.57	-	-	-	-	-	-	406.15	103.2
29	141.70	107.10	141.19	239.48	59.1	44.7	58.9	166.89	117.8
30	95.57	78.63	101.47	136.76	69.8	57.4	74.1	94.43	98.8
Total Industries	110.16	93.62	125.94	122.51	89.9	76.4	102.8	106.87	97.0

Source: (unadjusted data): F. IBGE - 1975 Industrial Census

* Includes establishments with fewer than 5 employees and/or gross output less than 640 times the largest minimum wage in force

** In these cases, the productivity of medium-scale establishments was taken as the basis.

small establishments appears well below - between 40 and 60 per cent - the standard adopted for the industry concerned.

On the other hand, there are some industries in which the average productivity of small firms is equal to or greater than that of large companies: 13 (chemical goods), 21 (pharmaceuticals), 24 (textiles) and 26 (foodstuffs).

It may thus be concluded that the theory of low productivity in small enterprises cannot be taken as the norm for all industries. However, the reasons for the discrepancies observed cannot be accurately gleaned from the global data available, so that there is a need for more detailed research at specific industry level of the characteristic roles and functions of enterprises of different sizes.

(d) Level of technology and division of labour

The occupational structure in a particular industry reflects the pattern of the division of labour and to a certain extent the technological level of that industry. These two variables constitute in turn the major qualitative differences between large and small-scale enterprises, as noted at the beginning of this chapter. Moreover, they are of considerable relevance to our study, since the degree of division of labour and the level of technology are reflected in the demand for qualified manpower and - especially in small-scale enterprises - in the type of qualifications required of entrepreneurs. However, this analysis could only be carried out for the capital city, on the basis of the surveys conducted by SENAI in 1976-77.

The analysis of the occupational structure reveals a broad tendency towards greater division of labour - and hence increased specialisation - as establishments increase in size. Small firms have a low ratio of technicians/engineers (1.6 per cent), offset to some extent by the relatively larger proportion of skilled workers (20 per cent); in large companies, on the other hand, the proportion of technicians to engineers is much higher (4.5 per cent), but the percentage of skilled workers drops to about 13 per cent, with a correspondingly higher proportion of unskilled and semi-skilled workers (Table 2.7).

Altogether, small firms demand more "all-round" or "polyvalent" workers capable of stepping in at several or all stages of the productive process. There is evidence that in small enterprises skilled workers - or even the entrepreneur - have to engage in activities that would be assigned to technicians or engineers in larger companies: there is not even an average of one such professional per small firm in the capital city, while there are about 41 for each productive unit in the case of large corporations.

Taking the proportion of technicians to engineers as an indicator of "technological density", considerable divergences may be noted, as expected, from one industry to another, with only the following recording relatively high figures compared with the industrial average (Table I.10 in Annex): machinery (12), electrical equipment (13), transport equipment (14), chemical goods (20) and pharmaceuticals (21). In almost all of these - except 14 - the "technological level" of small-scale firms is above the average of small firms, the same being true of the perfumery branch (22) and miscellaneous (30). In principle, this result is consistent with the typical structure of these industries which, except for 30, are modern, highly oligopolistic sectors, in which small establishments have to maintain relations of dependence on or complementarity to large companies and must therefore match their technological structure.

Table 2.7
Municipal district of the capital - 1976-77
Manufacturing industry - occupational structure
by size of establishment

Occupational Categories*	Small %	Medium %	Large %	Total %
Administration	22.7	22.4	19.6	21.5
Unskilled	9.0	10.6	11.6	10.5
Semi-skilled	46.2	49.8	51.5	49.2
Skilled	20.5	14.1	12.8	15.7
Technician	1.2	2.3	3.2	2.3
Engineer **	0.4	0.8	1.3	0.8
Total (100%)	290 935	299 534	319 155	909 624
(a) Establishments	12 318	1 802	352	14 472
(b) Technicians/ engineers	4 651	9 365	14 409	28 425
(c) Personnel directly engaged in production	220 309	223 058	242 079	685 446
b/a	0.4	5.0	41.0	2.0
c/b	47.0	24.0	17.0	24.0

Source: SENAI-SP - DPEA

* For definitions - see Annex B.

** And other higher-level employees connected with production.

CHAPTER III

EDUCATION AND VOCATIONAL TRAINING

The educational system in Brazil, being closely bound up with the process of industrial development, has rapidly expanded and there has been a rise in the level of education of the country's population since the 1950s. In this chapter we shall examine Brazil's educational system and some of its achievements. As a result of the shortcomings of the formal system, preparation of the labour force has to a large extent been undertaken by a parallel system of vocational training. Both the formal and the parallel system will be presented. Finally, we shall outline the different training programmes that have been developed to support small scale enterprises.

3.1 Evolution of the educational attainment of the population and the labour force

Within the Latin American countries, Brazil is one that has recorded some of the highest rates of expansion at all levels of education since 1960: taking this year as the base year (index 100), enrolment in 1975 stood at 273 for first-level, 726 for second-level and 1 152 for third-level education (Table 3.1).

This expansion, closely connected with the process of urban and industrial development over the same period, is reflected in pronounced changes in the level of education of the population and the labour force. Between 1960 and 1980, the proportion of illiterates within the country as a whole dropped from 46 to 31 per cent; in São

Paulo it dropped from 30 to 17 per cent. Although this indicator should be interpreted with caution,(1) it should be noted that there has also been a considerable shift in the proportion of the population attaining higher levels of schooling: in the sector of population aged 10 years and over, the ratio of the group with 9 to 11 years' schooling (intermediate level) more than doubled, both in Brazil and in the state of São Paulo, and the group having attained 12 years or more of schooling increased its proportion in the same age group from 2 to 4 per cent for Brazil as a whole and from 4 to 5 per cent for São Paulo. The most spectacular rise, however, concerns the group with 5 to 8 years' schooling, its proportion climbing from 7 to 16 per cent in Brazil and from 4 to 21 per cent in the state during the twenty years under review, largely as a result of the extension of compulsory schooling from 4 to 8 years as from 1971 and the development of supplementary courses. Similar trends were recorded in the level of education of the labour force, especially in industry (Table 3.2).

In spite of this progress, the level of education of the total and active population is still low: in 1980, 53 per cent of the population aged 10 and over in the country as a whole had not even completed the four years of basic schooling that had been the compulsory minimum before 1971; 47 per cent of the labour force and 25 per cent of industrial workers were in the same situation. The figures for São Paulo, though better than those for the rest of the country, also leave a good deal to be desired: almost 40 per cent of the population aged 10 and over, one-third of the labour force and a quarter of the industrial labour force had not attained the minimum level.

Although low, the level of education of the labour

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1. Because of the difficulty of measuring literacy. In fact, the lower-than-expected results of the mass literacy programme implemented during that period, combined with a low retention of first-level education, have contributed to maintaining a relatively high illiteracy rate.

Table 3.1
Brazil and Latin America - 1965-1970-1975:
Indices of the increase in enrolment by level of education

	Year	Total	1st Level	2nd Level	3rd Level
Brazil	1965	140	138	191	167
	1970	198	198	376	457
	1975	257	243	726	1 152
Latin America	1965	135	129	168	160
	1970	180	165	266	286
	1975	233	214	301	626

Source: Lago L., Almeida F. and Lima B.: Estrutura occupacional, educaçao e formaçao de mao-de-obra: os paises desenvolvidos e o caso brasileiro. Rio de Janeiro, FGV. (Estudos Especiais IBRE, 4).

force is not at odds with its occupational structure, which has changed relatively little since 1950, despite the radical changes in the structure of production over that period. Between 1950 and 1970, the proportion of professionals and technicians doubled from 2 to 4 per cent; that of skilled and semi-skilled workers rose from 28 to 29 per cent and that of unskilled workers declined from 65 to 62 per cent (Table 3.3). Thus, after two decades of expansion and qualitative changes in the economic structure, almost two-thirds of the labour force still consisted of unskilled workers. This picture may have changed in the 1970s, though not very significantly, as in 1976-77, 60 per cent of the labour force in the capital city were "unskilled" or "semi-skilled" workers;

Table 3.2

Brazil and São Paulo - 1960-80
Educational structure of the labour force aged 10 and over
Total and industrial activities (in %)

	Years of study	Industrial labour force 1960	Industrial labour force 1980	Total labour force 1960	Total labour force 1980	Population aged 10 and over 1960	Population aged 10 and over 1980
Brazil	No education/less than 1 year	24.6	15.1	42.5	24.8	43.7	27.5
	1-3 years	33.5	22.1	30.5	21.2	31.1	24.3
	4 years	26.0	28.1	14.0	21.9	13.1	20.5
	5-8 years	9.4	20.6	6.6	15.9	7.3	15.9
	9-11 years	3.5	9.5	3.0	10.3	2.7	7.9
	12 years or more	3.0	4.6	3.4	5.9	2.1	3.7
	Total (100 per cent)	2 809 317	10 668 735	22 750 028	43 796 763	48 828 654	88 149 948
São Paulo	No education/less than 1 year	18.0	9.5	26.3	11.3	29.5	14.9
	1-3 years	30.3	20.2	30.1	20.0	31.1	24.0
	4 years	40.8	30.0	30.5	26.7	27.3	25.5
	5-8 years	3.2	24.3	3.0	21.7	4.2	20.6
	9-11 years	3.9	10.4	4.3	12.1	4.1	9.8
	12 years or more	3.8	5.6	5.8	8.2	3.8	5.4
	Total (100 per cent)	1 053 310	3 988 368	4 517 594	10 489 622	9 323 041	19 359 272

Source: F. IGBE - 1960 Population Census and advance estimates of the 1980 Population Census.

the proportion of "skilled" workers, technicians and higher-level personnel engaged in productive activities stood at around 19 per cent; the remaining 21 per cent were in the so-called "administrative" category, covering all employees not engaged in production, including workers with little or no skills (Section 2.3).

3.2 The formal education system

The Brazilian education system is administered by the Ministry of Education and Culture, responsible for implementing the laws governing education and the decisions of the Federal Education Board - a body with standard-setting and supervisory functions.

Table 3.3
Brazil - 1950-70
Occupational structure of the labour force (in %)

Occupation level	1950	1970
Managers and administrators	5.1	4.5
Professionals, technicians, and artists	2.0	4.0
Skilled and semi-skilled workers	27.7	29.0
Unskilled workers	65.2	62.5
Total (100%)	11 707 654	21 715 433

Source: F. IBGE - Population Censuses

Each state has its State Education Board and Secretariat of Education, which organises its education system in accordance with the directives and precepts of federal legislation.

In August 1971, the Federal Government promulgated a law (5.672/71) increasing the number of years of compulsory schooling from 4 to 8, abolishing the distinction between academic and technical education and dividing the education system into three levels: first, second and third. Some information and comments on each of these levels are given below, special emphasis being laid on the State of São Paulo.

3.2.1 First-level education

Up to 1971, basic education in Brazil consisted of 4 years of primary schooling, compulsory for everybody between 7 and 14 years of age and provided free of charge in government schools.

In August 1971, Law 5.692 of the Federal Government abolished primary schooling and introduced unified compulsory *first-level education*, covering a period of 8 years(1) and provided free of charge in government schools. This level therefore also absorbed the former lower cycle of secondary education (*ginasio*), running for four years after primary schooling.

However, more than a decade after its introduction, the basic eight-year school has not yet become a reality, not even in the State of São Paulo, one of the best equipped in the country in terms of educational resources. In its Three-Year Plan for 1980-83, the Secretariat of Education of the State of São Paulo said that "it would be a distortion of the facts to speak of an integrated block, in which the eight grades of first-level education follow on smoothly from each other in a single sequence" and proposes a separate approach to the first four grades ("primary") and the last four ("ginasio").

Table 3.4 shows that wastage is high in state

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1. The school year consists of a minimum of 180 days of effective schoolwork.

first-level education.(1) Repetition is particularly high in the first grades; thereafter it declines slightly but after Grade 5 drop-out becomes a serious problem. All in all, out of 100 pupils entering Grade 1, only 78 reach Grade 4, and 45 reach Grade 8.

Also, as a result of late entrance and repetition, there tends to be a disparity between the age and grade of pupils; 12 per cent of first-level students in the State of São Paulo were aged over 14 in 1981, in theory, therefore, above the age-limit for attendance; 3 per cent were under 7, and 85 per cent were in the statutory 7 to 14 age group.(2)

High wastage rates and age/grade disparities are not the only problems confronting first-level education in the State. It has further been noted that a considerable proportion of the school-age population has not been reached by the system, including 25 per cent of seven-year-olds and 20 per cent of eight-year-olds, all of whom should theoretically be attending school.(3)

The gravity of these problems depends to a large extent on the socio-economic conditions of the population. Studies carried out by the Secretariat of Education show that the lower the socio-economic level of the community, the higher the probability of dropping-out and repeating, and the greater the disparities between age and grade.(4)

Responsibility for first-level education lies mainly with the state governments: in 1981, schools

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1. The State of São Paulo, inter alia with a view to reducing high wastage rates in the first grade, introduced a "Basic Cycle" in 1984, covering the first and second grades of first-level education (Decree No. 21.833 of 28 December 1983).
2. Secretariat of Education of the State of São Paulo: Estatisticas basicas, 1981.
3. SE SAO PAULO. 1980. SECRETARIA DE ESTADO DA EDUCACAO (Sao Paulo). Plano trienal, 1980-82. São Paulo.
4. Secretariat of Education, São Paulo, 1980. Op. cit.

Table 3.4
State of São Paulo
First and second-level education
Repetition and drop-out rate per grade 1980-81

Grades	Repetition rate	Drop-out rate	Retention rate
First level			
1st	33.4	5.2	1000
2nd	21.5	3.1	
3rd	16.6	3.9	
4th	11.1	-6.5	780
5th	24.2	14.0	
6th	21.1	12.0	
7th	18.0	12.5	
8th	12.2	-	448
Second level			
1st	14.5	21.2	
2nd	9.8	13.5	
3rd	4.4	80.6	282
4th	2.2		44

Source: Computed from the statistics of the Secretariat of Education, State of São Paulo.

belonging to the state network in São Paulo represented 75 per cent of the total number of schools, provided 79 per cent of courses and catered for 79 per cent of pupils; municipal and private schools accounted for the rest (Table 3.5).

3.2.2 Second-level education

Lasting three to four years, it aims at providing young people with a fundamental education as well as

Table 3.5

State of São Paulo - 1981
Administrative control of 1st, 2nd and 3rd level education (in %)

Breakdown		Administrative control				Total*
		Federal	State	Municipal	Private	(100%)
1st level	Schools	-	75.3	6.9	17.8	5 783
	Classes	-	79.2	10.0	10.8	125 234
	Students	-	79.0	10.7	10.3	4 209 071
2nd level	Schools	0.1	56.4	3.5	40.0	1 824
	Classes	0.3	58.4	2.3	39.0	21 390
	Students	0.3	58.7	2.4	38.6	744 174
3rd level	Students**	0.8	10.8	6.7	81.7	499 556

Source: Statistics of the Secretariat of Education of the State of Sao Paulo, 1981 (1st and 2nd levels) and 1983 Statistical Yearbook of São Paulo (3rd level)

* Not including 12 332 schools and 234 140 students in isolated 1st level units

** Data for 1980.

preparing them for the world of work; it includes a core curriculum of general subjects, followed by specialised training - which is supposed to play a predominant role, providing students with vocational qualifications.

This was the basic aim of Law 5.692, which integrated in the new second-level education system the various streams of upper secondary education existing before 1971:

- general stream (classical or scientific), running for three years and essentially preparing students for university;
- teacher training (three years), designed to train primary-school teachers;
- technical (three to four years), providing vocational training for various sectors of the economy.

The reform theoretically abolished the distinction between academic and technical education in Brazil.

But this objective was not really achieved: like the school of eight-year basic education, the vocationalisation of secondary education in Brazil failed to materialise.(1)

In October 1982, another Law (7.044 of 18 October 1982) partly changed the objectives of second-level education, restoring priority to the "fundamental education" of students through general education; vocational training was given precedence only in technical streams, i.e. those that were already vocationalised before Law 5.692/71.

According to the Secretariat of Education of the State of São Paulo, the failure of vocationalised second-level education was due both to administrative and technical pedagogical problems: on the one hand, the physical, human and financial resources needed to initiate and run the courses were lacking and/or inadequate; on the other, the aspirations of students were to move on to

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1. This statement does not apply to the technical education network, primarily industrial, that was already operating prior to the 1971 reform.

the third level; they preferred a solid general education to prepare them for the selective entrance examination and to perform well later on in higher education. "The schools opted for courses that would be relatively easy to set up and run and that would not require highly-specialised personnel; the pupils opted for courses that seemed to offer a better preparation for third-level education - those of the tertiary sector."(1)

Moreover, the planning of second-level education was impaired by the lack of qualitative and quantitative data concerning the demand for middle-level manpower. In the 1960s and 1970s, a much repeated phrase was "Brazil needs technicians", but there were rarely any precise indications as to how many and what kind.(2)

In short, therefore, the attempt to vocationalise education failed because no assessment of the available infrastructure was made nor systematic study carried out of students' aspirations and the specific demand of the labour market. The 1971 reform also failed, according to its critics, in its principal and less manifest aim of curbing the growing demand for higher education by channelling young people into the labour market. In the political context of the early 1970s, it was vital to curb that demand, because failure to satisfy it would have aggravated social tensions, especially in the urban middle classes.(2)

In practice, the second level perpetuates and aggravates the distortions noted at the first level: high wastage rates due to dropping-out and repetition and age/grade disparities. In the first year, 14.5 per cent

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1. State Secretariat of São Paulo 1980. Op. cit.
2. See for example, CUNHA, Luiz Antonio C.R. 1977. Politica educacional no Brasil: a profissionalizacão do ensino medio. Rio de Janeiro, Eldorado, and PARO, Vitor H. Escola e formação profissional: um estudo sobre o sistema regular de ensino e a formação de recursos humanos no Brasil. São Paulo, Cultrix/Fundação Carlos Chagas.

of the pupils repeat and 21.2 per cent drop out. All in all, only 28.2 per cent of those who entered the first level reach the third year of secondary education (Table 3.4). The age/grade time-lag is more pronounced at this level: 27 per cent of students in the State of São Paulo are over 18, an age at which they should theoretically have completed the course; 4 per cent are under 15 and the remaining 69 per cent are in the ideal 15-18 age group.(1)

In 1981 in the State of São Paulo, there were 744 174 secondary school pupils distributed as follows among the different streams:

- common first-year secondary	32.6 %
- vocationalised secondary - general training	23.4 %
- agricultural training	0.6 %
- industrial training	13.6 %
- commercial and other training in the service sector	29.6 %
- others	0.2 %
Total (100 per cent)	744 174

The public authorities - mostly at state level - are still chiefly responsible for second-level education in the State of São Paulo, but private bodies also play an important role, according for 40 per cent of schools, classes and pupils in 1981 (Table 3.5).

3.2.3 Third-level education

Higher education in Brazil was not affected by the 1971 reform. It is still basically vocational and professional, with courses varying from 4 to 6 years. The entrance requirement is completion of the third grade of second-level education.

A major and disorderly expansion of higher education occurred in the 1970s, as evidenced by the 1975 index of the growth in enrolment, which stood at 1 152 compared with 1960 (Table 3.1). According to CUNHA(2), this expansion is largely attributable to the ambitions of

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1. SE. São Paulo. Op. cit.
2. Op. cit.

the urban middle classes to rise in the social hierarchy by means of education. This was at a time when the economic policy adopted in 1964 promoted a more intense concentration of capital and income and thus greatly restricted middle class opportunities of social mobility by means of savings, investment and capital reproduction through the establishment of small enterprises, handicrafts and employment in the professional sector.

In spite of its huge expansion, higher education is in reality still confined to a small proportion of the population: of the 6 million students enrolled in the State of São Paulo in 1981, only 8 per cent were enrolled in third-level establishments.

Most of these had opted for the arts, as shown by the following breakdown for the State of São Paulo in 1980:

- social sciences	55.8 %
- literature	5.2 %
- fine arts	2.6 %
- biological sciences and health-related professions	10.0 %
- natural sciences and technology	25.3 %
- agricultural science	1.0 %
Total (100 per cent)	499 556

Unlike the first and second levels, higher education is predominantly in the hands of private establishments, which accounted for 82 per cent of initial enrolment in 1981 in the State of Sao Paulo (Table 3.5).

3.2.4 Suppletory education

Suppletory education is an alternative available to adolescents or adults who were unable to attend or complete a formal course of first or second-level education at the appropriate age. It includes all the courses provided in schools, special centres or the mass media, and prepares students for examinations held in official or recognised establishments, leading to the award of a certificate of completion of studies equivalent to the first or second level, as the case may be.

This category also includes the more traditional type of courses leading up to the "madureza" (leaving certificate examination), such as apprenticeship and other vocational training courses provided by training institutions such as SENAI and SENAC. Suppletory courses proper predominate, however, most of them being provided by private schools, as shown in the following table of the distribution of initial enrolment in the State of São Paulo in 1982:

Types of course		Responsible authority	
First-level suppletory courses	60.1 %	State *	20.7 %
Second-level suppletory courses	21.1 %	Municipal	5.2 %
Apprenticeship	5.9 %	Private	58.7 %
Vocational training	12.9 %	SENAI	8.9 %
		SENAC	6.5 %
Total(100 per cent)	332 456	Total(100 per cent)	332 456

* Including Minerva Project

Source: SEADE, 1983. FUNDACAO SISTEMA ESTADUAL DE ANALISE DE DADOS. 1982 Statistical Yearbook of São Paulo.

3.3 Education and the labour market

On the whole, education seems to play an important role in the social and professional advancement of individuals, inasmuch as it helps them to develop their "cultural capital" and qualify for higher posts in the occupational structure.

Indeed, the "cultural capital" acquired in school (types of attitudes, behaviour, ways of expressing oneself and social relations) may be just as important - sometimes even more important - in exercising certain professions or obtaining prestigious and well-paid jobs than the actual "technical skills" acquired on a course. Attending a course at certain higher-level institutions, for example, is an asset in itself, apart from the fact that such establishments usually lead to social contacts that can further the career of their graduates.

Furthermore, the possession of a degree or a higher level of education is usually an advantage in the labour market. According to various authors, increasingly high educational levels (credentials) are being demanded for different kinds of employment, not so much because more skill and technical competence are needed but because it is a way of screening the relatively abundant supply of "educated" individuals on the market. The raising of admission requirements in turn stimulated the demand for schooling.(1) A case in point in Brazil is the number of engineers hired to do work that could well be performed by technicians. This is forcing, for example, a number of SENAI-trained technicians, already well-paid and fully integrated into their respective occupations, to enrol in higher education courses in order to be able to rise in the company hierarchy or even to obtain managerial posts in their own sectors of activity.(2)

Seen in this light, education would seem to perform a dual role of educating and screening. The two roles are combined, so that the fact that individuals with more schooling earn more income would not necessarily mean that they are more "qualified" (in the sense of performing better or being more productive); it does mean, however, that they were successful in a selective system.(3)

As far as small-scale enterprises are concerned, there is virtually no information capable of shedding light on the role of formal education either in the recruitment of personnel or on the productivity of entrepreneurs. The small amount of data available would seem to indicate that the level of education of the staff

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1. Education, Work and Employment, Vol I and II. IIEP, Unesco, Paris, 1980. M. CARNOY, Education and Employment: A Critical Appraisal. IIEP, Unesco, Paris, 1977.
2. SENAI-SP. 1) Os tecnicos formados pelo SENAI: uma apreciaçao sobre sua inserçao no mercado de trabalho. São Paulo, DPEA, 1980. 2) E.M. Leite, Os tecnicos formados pelo SENAI: analise das variacoes de salario. DPEA, 1983.
3. CUNHA, Luiz A. Escolaridade e trabalho: quatro estudos sobre a fixaçao de requisitos educacionais. Forum, Rio de Janeiro, Jan-Mar 1978.

of small-scale enterprises is on a par with or higher than that of employees in medium or large-scale units. Data on São Paulo for 1975 show that the proportion of employees with no schooling or incomplete primary education was 16 per cent in micro-enterprises, 17 per cent in small-scale enterprises and 22 per cent in medium and large-scale enterprises; moreover, 22 per cent of the staff of small enterprises, 19 per cent of that of medium-scale enterprises and 20 per cent of that of large-scale enterprises were in the intermediate education group (secondary school graduates) (Table 3.6). Although allowance must be made for possible distortion, these data seem to indicate that the relative polyvalence of the staff of small-scale enterprises is associated with a greater demand for education; in large companies, on the other hand, the simplification of some tasks as a result of the increased division of labour considerably reduces the amount of skill needed to carry them out. As we saw above, small-scale enterprises employ proportionally more "skilled" staff and less unskilled labour than large establishments (Chapter II, Section 3).

With regard to entrepreneurs, there are indications that the most recent generation has taken advantage of the wider availability of higher education, especially courses in engineering, economics and administration, not only with a view to mastering techniques and acquiring information that can be used in running their business but also to justify their standing in the management of the company, "in accordance with new patterns of recognition of competence associated with the expansion of a labour market for qualified executives, many of whom are recruited by large organisations".(1)

As far as the "qualifications" of small-scale entrepreneurs or the formation of their "cultural capital" are concerned, it is quite possible that acquiring a higher education degree may indeed prove useful, depending on the establishment attended. It is doubtful, however, whether technical and managerial capabilities are enhanced

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1. RATTNER, H., cord. 1979, Op. cit.

Table 3.6

State of São Paulo - 1975
Level of education of the labour force by size of the employing enterprise*

Level of education (Years of study)**	Size of enterprise					Total
	Micro (up to 4 employees)	Small (5-99)	Medium (100-499)	Large (500 or more)	Not stated	
No education	1.1	1.5	1.7	1.3	-	1.5
Incomplete primary (1 to 3 years)	14.5	15.5	19.9	20.4	-	18.2
Complete primary (4 years)	64.4	56.5	54.3	54.4	58.1	55.6
Complete "ginasio" (8 years)	13.2	13.5	12.0	11.7	24.2	12.5
Complete "colegial" (11 years)	4.5	8.5	7.5	8.0	4.8	7.9
Completed higher education (15 years)	1.2	3.6	3.9	3.6	12.9	3.6
Not stated	1.1	0.9	0.6	0.6	-	0.7
Total (100 per cent)	230 633	1 385 467	1 071 477	1 288 065	310	3 975 952

Source: SEPLAN-SP. 1978 Evoluçao das ativadades economicas em São Paulo entre 1930 e 1975; conclusoes. Mimeo.

* All branches

** This nomenclature for the levels of education is prior to the 1971 reform; it was maintained to reflect faithfully the breakdown used by the data source.

by such courses:

- on the one hand, because expansion of higher education is occurring to the detriment of its quality(1);
- on the other, because in the case of good traditional establishments the courses seem to be designed for the "executive" or "technocrat" as demanded by large public or private corporations.

3.4 The system of vocational training

The Brazilian system of vocational training is made up of a large number of public and private establishments that virtually constitute a second educational system.

From 1976 onwards, most of these establishments were incorporated in the SNFMO - the National Manpower Training System of the Ministry of Labour - constituted with the view to setting standards and establishing guidelines for the formulation of a national policy of development of human resources.

The SNFMO census covered 1 604 establishments engaged in non-formal vocational education in 1981, 543 of which were located in the State of São Paulo.(2) They were run by:

- private enterprise bodies such as SENAC (National Commercial Training Service) and SENAI (National Industrial Training Service);
- public or private bodies concluding contracts with SENAR (National Rural Training Service) and PIPMO (the Intensive Manpower Training Programme of the Minister of Labour);(3)

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1. PASTORE, J. 1971. O ensino superior em São Paulo: aspectos qualitativos e quantitativos de sua expansao. São Paulo, Ed. Nacional/IPE and PARO, Vitor H., 1979 Op. cit..
2. Ministry of Labor Manpower Secretariat Cedestro des lutidades de formacao profisionol do Sisterna Nocional do Formecao de Nos de obra Brasilia.
3. PIPMO and the practice of accreditation by CFMO referred to below no longer existed at the end of 1982.

- public and private bodies registered with or accredited by CFMO (the Federal Manpower Board, governing body of the SNFMO) to execute vocational training programmes for themselves or third parties.

Geared specifically to industry special mention may be made of SENAI and some of the bodies contracted to PIPMO or accredited by CFMO.

In spite of SNFMO's wide scope, it is practically impossible to quantify and/or assess its impact on industry as a whole and on small-scale enterprises in particular; in this connection, the only data available relate to SENAI, which is in fact the system's principal agency in the industrial field.

In addition to the establishments connected with SNFMO vocational education is also provided by agencies belonging to the independent vocational education system, by technical schools and, particularly in the case of small-scale companies, by entities offering support or advisory services to enterprises.

3.4.1 Private non-formal vocational education ("independent schools")

Very little is known about this kind of vocational training. The only information available on the subject is in the works of PARO,(1) who mentions the existence, according to 1976 data, of almost 1 100 establishments belonging to this category in the municipal district of São Paulo alone.

Such establishments are officially termed "Independent Vocational Education Centres" in State Decree No. 26,570 of 12 October 1965.(2) They are the most numerous among the various entities or courses which, not

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1. PARO, Vitor H. Op. cit. and A proposito do ensino profissional livre no Estado de São Paulo. Cadernos de Pesquisa. Fundaçao Carlos Chagas. Feb. 1981.
2. Which lays down conditions for the registration and running of educational establishments in the State.

being subject to the relevant federal legislation, should be registered with the Secretariat of Education of the State of Sao Paulo.

According to Paro, the register of the Secretariat contained records relating to the above-mentioned Centres only - private establishments offering courses of short or medium duration (not longer than three years), imposing minimum educational requirements (only what was formerly known as primary education) and providing education and training in numerous technical and skilled occupations in industry, trade and the services sector, e.g. radio and television technician, technical and mechanical drawing, machinery and tool design, typing, accounting, cutting and dressmaking, and many more.

In view of the considerable quantity of existing establishments, the variety of courses offered and, above all, the fact that they are private insitutions operating in a context of free competition (hence depending on demand for their services), Paro considers that they draw students mainly from the lowest socio-economic strata, since the courses are not recognised and provide training for low "status" occupations. On the other hand, their fees are lower than those for private establishments in the formal education system.

In the light of these data, it is important to investigate to what extent small-scale enterprises are affected by these "independent schools", since all the evidence seems to indicate that large corporations are the main consumers of the products of the "regular" system of vocational education, including establishments such as technical schools and SENAI.

3.4.2 Industrial technical schools

The reform of the education system in 1971 incorporated into regular second-level education the network of schools (federal, state, SENAI-run and others) that had constituted the country's industrial technical education system since 1942.

That system therefore ceased to exist in 1971, but industrial technical education did not disappear, and though diluted among the courses constituting the new vocationalised secondary education, it succeeded in maintaining higher standards than the latter in respect of vocational education.

In 1969 there were 113 technical schools in the country, 43 being in São Paulo: 1 federal, 6 state-run, 2 run by SENAI and 34 private. After the 1971 reform, it became difficult to obtain statistics on the activities of these establishments, but there are indications available that these activities have increased or been diversified.

SENAI's activities, which are analysed in the next section, expanded appreciably. As far as other technical schools are concerned, surveys conducted in 1975 by CENAFOR on 43 of them (in the country as a whole, of which 14 were in Sao Paulo, including 6 run by SENAI), show their diversification. A school such as the Federal Technical School of São Paulo (ETFSP), for example, has begun to offer regular courses(1) in electronics, data processing and telecommunications, in addition to mechanics, building and electrotechnics, for which they offer training at post-secondary level. In 1982, ETFSP created 800 new places on its various courses and its total enrolment came to about 3 400 students. In 1982, 463 technicians were training on regular courses alone.

Such information gives an idea of the important role that technical education can play in the training of qualified manpower for industry, although it now appears to mainly provide preparatory instruction for entering higher education. Most students hope to enrol in higher education later on: they choose technical education because of the better quality of the education and also to acquire a skill that enables them to find employment to

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1. - Regular courses: corresponding to second-level education, with four grades lasting a year each and an average of 4 500 hours of teaching, including the internship period working in a company.
   - Suppletory courses (for candidates having completed secondary education): running for two years and offering very specialised training.

finance their third-level studies.(1)

At all events, these are courses that actually produce qualified manpower for the market: whether small-scale enterprises benefit from their activities or not remains to be seen.

3.4.3 SENAI - National Industrial Training Service

Established in 1942, "funded and administered by industry", SENAI is primarily engaged in the initial training, specialisation and further training of skilled and semi-skilled manpower essentially at operative level. In some states, including São Paulo, SENAI also trains middle-level technicians and technical assistants for specific industries.

In 1982 SENAI-São Paulo (SP), using its own resources, trained almost 33 000 skilled workers and provided various types of courses and programmes for a further 126 000 such workers in 95 vocational training units in the main industrial centres of the State; the number of specialisations taught in different courses amounted to 162 and the number of industrial training programmes to 264 (Table 3.7).

At technician level, SENAI-SP had 4 653 students on its rolls in 1982, of which 1 559 completed their courses. They were distributed among 12 different specialisations, mostly in fields not covered by the technical-industrial education network described in the previous section (Table I.11 in Annex A).

SENAI concentrates on occupations in the field of mechanics - amounting to 32 per cent of total enrolment, and almost 70 per cent of enrolment in its formal courses in São Paulo in 1982 but it is diversifying in line with demand, with a view to extending its coverage to virtually all the industries.

These data are sufficient to illustrate in general terms the quantitative impact of SENAI's activities with respect to the training of industrial manpower. A historical study of SENAI-SP's action (1943-75) shows that

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1. CUNHA, Luis Antonia. 1977. Op. cit.

Table 3.7

SENAI-SP - 1982: Enrolment, output and number of specialisations offered by type of course/programme - direct action

	Courses/Programmes*	Enrolment	Output	Number of Specialisations
CAI	Industrial Apprenticeship Course	24 826	10 131	36
CQP-I	Vocational Training Course I	16 830	14 223	41
CQP-III	Vocational Training Course III	434	312	2
CQP-IV	Vocational Technical Course (Vocational Training Course IV)	1 423	271	9
CAP	Further Training	2 312	1 858	18
CEP	Vocational Specialisation Course	7 056	5 371	49
HP	Secondary Technical Education	2 796	976	7
	Sub-total - Courses	55 677	33 142	162
TI	Industrial Practical Training			
	Operatives in enterprises	87 154	83 320	230
	Supervisors	25 405	24 838	9
	Others	20 511	18 321	-
	Sub-total - TI	133 070	126 479	264
	Total	188 747	159 621	

Source: SENAI-SP, 1983. Estatistica Escoliar 1982.

* See explanations concerning types of course/programme in Annex B.

it was sufficient, in theory, to meet the bulk of the demand for skilled manpower in São Paulo industry.(1) More recent evaluations have also concluded that, in quantitative terms, SENAI-SP's performance has been consistent with the evolution of the industrial sector in the State.(2)

In qualitative terms, a number of studies draw attention to the value of the courses offered by SENAI-SP, from the standpoint of both occupational performance and the social mobility of its graduates.(3)

3.5 Vocational training for small-scale enterprises

3.5.1 Training of entrepreneurs/executives

A "parallel" training and advisory system for entrepreneurs and executives exists, which also includes numerous public and private agencies, some of which cater specifically for small and medium-scale enterprises. In the State of São Paulo there are five important agencies of this kind.

(a) CEBRAE - Brazilian Support Centre for Small and Medium-Scale Enterprises - and CEAG - Management Assistance Centre for Small and Medium-Scale Enterprises

Established in 1972 and attached to the Ministry of Planning, CEBRAE is a non-profit-making body that provides

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1. SENAI-SP *Uma estrategia de formaçao de mao-de-obra: a contribuiçao do SENAI à industria brasileira*. By Pastore et al. DPEA /Mimeo/ São Paulo 1978.
2. SENAI-SP *Relatorio* 1980-81-82.
3. *O valor da formaçao profissional no mercado de trabalho*. by J. Pastore and Marisa de Assis. *SENAI-SP*, DPEA. 1977.
   CASTRO, C. de Moura and SOUZA, A. de Mello. *Mão-de-obra industrial do Brasil: mobilidade, treinamento e produtividade*. IPEA Research Report 25, Rio de Janeiro, 1974.

business organisation services and promotes the training/further training of entrepreneurs and executives.

The executive agents of CEBRAE's programmes are the CEAGs in each state. The São Paulo CEAG lays special emphasis on business organisation programmes, and attaches less importance to training because according to them:

- in São Paulo, unlike other states, the supply of courses and training programmes for entrepreneurs is abundant and diverse;
- the problems of small and medium-scale enterprises arise from their relationship with the environment and cannot be solved simply by increasing the level of qualification of their management; moreover, the latter are not as unqualified to run their businesses as is customarily believed.

In formal terms, CEAG-SP classifies enterprises into three categories:

- micro enterprises: up to 20 employees and/or annual sales of up to 5 000 MVRs;(1)
- small-scale: 21 to 100 employees and/or annual sales value of 5 000 to 20 000MVRs;
- medium-scale: 101 to 500 employees and/or annual sales value of 20 000 to 85 000 MVRs.

The main programmes currently run by CEAG-SP are shown in Annex A (Table I.12). No data are available, however, to evaluate the usefulness of such programmes or the composition of their clientele.

(b) FIESP-CIESP - Federation of Industries in the State of São Paulo/DEPROV - Productivity Department

FIESP-CIESP, a body representing São Paulo industrial enterprises, offers various kinds of assistance to its associates, the majority of whom, by virtue of the

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1. MVR = major reference value = 11 225 cruzeiros in March 1983. The MVR, introduced by Law No. 6.205 of 29 April 1974, replaces the minimum wage as the basis for fixing and adjusting legal obligation limits.

industrial structure, are small-scale entrepreneurs. Most FIESP bodies do not, however, possess information that could be used to describe or quantify their assistance to small-scale enterprises.

Responsibility for the training or further training of entrepreneurs or executives lies with DEPROV which, with a view to increasing the productivity of enterprises, provides the following services:

- management training through courses and seminars in the fields of general administration, financial administration, marketing and production; such activities can be either open or "closed", that is to say organised specifically for one or more companies in a particular industry; the programme for 1983 (the same as for 1982) consisted of 42 courses, mostly of 15 to 20 hours' duration, organised as evening classes at rates lower than those charged by private bodies;
- business consultancy, including critical studies and the proposal of solutions to the problems of individual companies;
- dissemination of technical literature:
  - . technical handbooks concerning modern management techniques;
  - . technical information - collections of articles on technology and management from specialised publications;
  - . the series "Como Fazer" - guidelines for small and medium-scale enterprises on the preparation of studies and critical analyses.

In 1982, DEPROV provided an average of 96 courses a month, totalling 1 979 hours and attended by 2 655 participants, mostly managers and representatives of small and medium-scale enterprises (in the opinion of DEPROV specialists, since there are no statistics of coverage by scale of enterprise).

In addition to specific courses and publications for small and medium-scale enterprises, DEPROV has for the past three years been running a Programme of Management Assistance to Micro-Industry (in agreement with

CEBRAE/CEAG) for enterprises with up to 20 employees. The programme, organised on the basis of an analysis of some 300 micro-enterprises, consisted of two units:

- basic management training of 15 hours' duration in evening classes, covering basic principles of micro-enterprise administration;
- business consultancy through visits by DEPROV experts to the participants' companies to make critical analyses and offer solutions to problems encountered.

(c) CTAE - Technical-Economic Business Consultancy Centre

Established in 1968, CTAE is attached to the Department of Economics and Economic Planning (DEPE) of the Philosophy and Human Sciences Institute of UNICAMP (State University of Campinas). Its activities of promotion and support for small-scale industry include training courses, economic and management consultancy, and studies and research carried out by the technical teaching staff of DEPE through contracts and agreements with classes and governmental bodies.

Economic and administrative consultancy for entrepreneurs involves carrying out critical analyses in companies, offering advice, and supervising the implementatotion of the proposed measures; this field includes over 600 types of activity (critical analyses and consultancy reports).

The recession has seriously impaired CTAE's activities, which practically came to a halt in 1982. However, given its flexible structure, which makes it possible to utilise DEPE human resources and equipment whenever the need arises, the Centre hopes to resume its activities as soon as demand revives.

(d) SENAI-SP - Assistance to small and medium-scale industry

In 1980, concerned about possible preferential treatment for large-scale enterprises, SENAI-SP established a department with the specific task of catering for small and medium-scale industry.

In its two years of activity, the department's main activity has been specialised technological assistance, in solving problems raised by entrepreneurs, each case being looked at individually. Such assistance is relatively diverse, but is mainly concentrated in two areas: manufacturing methods and rationalisation of production. The system of assistance is simple: entrepreneurs approach SENAI with a query or problem; SENAI sends out one or more technicians to the enterprise to diagnose the situation; an assistance plan is then drawn up, which may include action by SENAI itself (free of charge up to a limit of 100 hours of consultancy) or referral of the enterprise to bodies better equipped to assist it.

In addition to "individualised" technological assistance, the department distributes technical publications, offers study grants to entrepreneurs and sponsors specific technological seminars for companies in a particular industry.

In 1982, the department carried out 151 programmes, totalling almost 10 000 hours of activity, providing assistance for 301 small and medium-scale industries in the capital city and a further 21 municipal districts in the metropolitan area and the interior of the State.

The major beneficiaries of this assistance were, in fact, small-scale enterprises (up to 99 employees), which accounted for almost 70 per cent of the total of programmes and hours. Among industries, the ready-made clothing industry was in the forefront, since it too accounted for almost 70 per cent of activity in 1982 (Table I.13 in Annex A).

Mention should also be made of the seminars on technology which, although they play a minor role in terms of hours, serve as an "intensive course" for the solution of specific problems raised by entrepreneurs in the same industry. In 1982, six seminars of this kind were held in the capital city and the interior, attended by 502 representatives of 163 small and medium-scale enterprises.

3.5.2. Manpower training: SENAI's impact

On the basis of research carried out in Rio de Janeiro and focusing on the CAI (Industrial Apprenticeship

Course), CASTRO and SOUZA(1) noted in 1974 that:

> "The typical SENAI graduate is generally employed by a large-scale modern company. This is mainly due to existing wage differentials in favour of large corporations. But there seem to be other more subjective reasons. Our personal observation suggests that SENAI students develop a taste for technological sophistication rather than improvisation. Their training leads them to expect full logistic support, enabling them to attain a high degree of perfection in their productive activities. (...) SENAI graduates are therefore trained to work in large companies, where they are more likely to meet with these conditions. Moreover, their initial employment is almost invariably due to placement by SENAI itself which, for obvious reasons, has more contacts with companies that can absorb a large number of its graduates (...)
>
> On the other hand, it should be borne in mind that the more comprehensive training provided by SENAI is better suited to the variety of situations and relatively limited standarisation of functions in small and medium-scale enterprises. New employees in a large corporation are less likely to have the opportunity of putting their training into practice. Nevertheless, large-scale companies certainly receive a disproportionate number of SENAI's graduates. In practice, therefore, SENAI is strengthening the competitive position of large corporations (...). In contributing to SENAI and using its graduates less frequently, medium-scale enterprises are once more placed at a disadvantage in the Brazilian industrialisation process."

SENAI-SP subsequently carried out studies and research to investigate these findings in greater detail. Many of the evaluation studies look, amongst other things,

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1. 1974 Mão-de-Obra Industrial do Brasil - Mobilidade, Treinamento e produtividade Op. cit. pp.407-408.

at the variation in assistance according to company size, even if the breakdown for small-scale enterprises is not always given.

In 1976 a study carried out in 536 various industrial enterprises concluded that large companies knew more about SENAI, used its services more, and for that very reason evaluated its activities in favourable terms.(1) In the case of small and medium-scale enterprises, although a good many of them (between 45 and 50 per cent) expressed a favourable opinion on SENAI graduates, courses and training, the majority never or only rarely employed ex-SENAI students (80 per cent), were not familiar with its facilities (60 per cent) and considered that little or nothing would be changed if the establishment were to close down (77 per cent).

Another study was undertaken in 1980 to assess to what extent firms take advantage of the fiscal incentives

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1. SENAI SP: *impressoes sobre o seu desempenho* by Maria L. FARONE. DPEA mimeo 1977.
Undertaken in 1976 as part of a "critical study" of the SENAI system in the country as a whole, this research project covered 609 entities in São Paulo, including 536 industrial enterprises of different kinds, representing 8 per cent of establishments with 50 or more employees in the main industrial zones of the capital city (9 subdistricts) and the interior (a further 20 municipalities), the rest were public and community bodies and enterprises with agreements and contracts with SENAI.
The results were analysed by geographical area (capital city and interior), industry and size of enterprise - on the one hand small and medium-scale enterprises (50-499 employees, 82 per cent of the sample) and on the other large-scale enterprises (500 and more employees, 18 per cent of the sample); Table I.14 in Annex A summarises the data by size of enterprise only, a variable of greater interest for the study. There is no breakdown, however, for small-scale enterprises.

for vocational training provided for under Law 6297/75, and the use made of SENAI's consultancy service in this respect. This law, passed in 1975, allows corporate bodies to deduct from their taxes twice the amount spent on vocational training projects, up to a maximum of 10 per cent of taxable profits. To qualify for this allowance, such projects - relating to training courses and programmes for business staff and management and the financing of training for junior apprentices at SENAI - must be submitted to CFMO (the Federal Manpower Board of the Ministry of Labour), fulfil a series of requirements and comply with the procedures laid down in the above-mentioned law. In order to help enterprises prepare projects for submission to CFMO and implement them afterwards, SENAI-SP established a business consultancy service.

The study(1) showed that:

- as a rule, large companies take the lead in vocational training - by means of organising training programmes and financing training for apprentices at SENAI - and benefit most from the incentives provided for in the Law;
- the degree of familiarity with SENAI and the degree of utilisation of its services increase in line with the size of the enterprise.

Most small firms (70 per cent) do not normally provide training facilities for their employees or finance

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1. O Senai e a lei 6.929/75 by Marcela KATZ. SENAI-SP DPEA mimeo 1980.
   The study covered 916 firms in the capital city and the interior, in practically all industrial branches, i.e.:
   - all industrial enterprises in the State having submitted projects to CFMO with (252) or without (200) SENAI assistance; and
   - 464 enterprises that had never submitted projects to CFMO, selected at random from establishments with 50 or more employees in the State.

courses for junior apprentices at SENAI; they do not benefit from the legal incentives, mainly because they train their personnel on the job, recruit personnel with experience or do not employ skilled labour. (Table I.15 in Annex A)

More information can be obtained from two studies evaluating SENAI's apprenticeship programmes at three different occupational levels: lathe operators, general mechanics and machine fitters - these occupations accounting for the bulk of SENAI-SP's output in the field of mechanics.

The study on lathe operators(1) shows that:

- a large majority (94 per cent) of ex-students had been financed by firms with over 50 employees (most had more than 500) and were employed by them (80 per cent); on the other hand, smaller companies (up to 50 employees) succeeded in absorbing a much larger proportion (18 per cent) of graduates than they had financed during the training course (5 per cent) (Table I.16 in Annex A);
- of the 5 532 lathe operators in the 316 companies studied, 52 per cent had not attended SENAI courses, a proportion that increased to 56 per cent in the case of small-scale enterprises (10-99 employees) and to 65 per cent in the case of micro-enterprises (up to 10

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1. Avaliacão do desempenho dos torneiros mecanicos formados pelo SENAI by Marisa de ASSIS - SENAI-SP DPEA mimeo 1977.
The research covers 877 of the 1 356 ex-students trained in 1967, 1970 and 1973 in eight SENAI schools in the capital city. It was conducted in two stages: interviews first with graduates and then with supervisors in the 316 companies where the 393 graduates were actually employed in the activity they had learnt, and with 5 139 other lathe operators, some of whom were trained by SENAI and some not.

employees) (Table I.17 in Annex A);

- the lesser degree of specialisation of tasks and hence of division of labour in small-scale enterprises is reflected in the large proportion of polyvalent workers, i.e. workers not confined to a specific activity, and craftsmen, compared with medium and large-scale enterprises;
- the degree of utilisation of the knowledge and skills received at SENAI(1) is much greater among graduates employed in micro and small enterprises; this is not, however, reflected in their wages since the larger the company the higher the wages paid;
- although they pay less, micro firms rate SENAI graduates very highly in areas such as working methods, reliability, productivity, human relations, initiative and self-assurance; good ratings were also obtained by graduates employed in small/medium-scale (10-499 employees) and large-scale enterprises (500 or more), which testifies favourably to their flexibility and capacity for adapting to different work situations.

Simpler in methodological terms but more comprehensive than the former, the study on mechanics and machine fitters produced similar results (Table I.18 in Annex A).(2)

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1. Measured by calculating the proportion of graduates - employed in the occupation for which they were trained or a related one - who execute, continually or from time to time, the operations constituting the so-called SMO (Occupational Methodical Series), which represents the practical or "shop-floor" part of each course.
2. Estudo com ex alunos do CAI e CQPI. Relatorio I CAI by Marcia H. de LIMA. SENAI-SP DPEA mimeo 1982. The research, carried out in January 1982, covered 838 of the Apprenticeship Programme (CAI) graduates trained in July 1979 as general mechanics (498) and machine fitters (340) in 16 SENAI schools - 4 in the capital city, 4 in the metropolitan area and the rest in the interior.

- the majority of the graduates employed (72 per cent) are working in companies with over 100 employees (55 per cent in companies with a staff of more than 500);
- on average, graduates employed in large companies earn higher wages, but in micro-enterprises, a larger proportion of graduates are in the highest income bracket (5 times or more the minimum wage), being in most cases the owners or managers of those units;
- the highest levels of utilisation of training were recorded in micro-enterprises in the case of machine fitters and in small-scale enterprises in the case of mechanics; in both cases, the graduates employed in large companies recorded the lowest levels of utilisation of their SENAI training.

The 1982 evaluation study of the apprenticeship programme also covered the CQPI training courses for the same occupational groups.(1)

Although the vocational training programme (CQPI) is structurally different from the apprenticeship one (CAI)(2), so that there are marked differences between students - for example, the average age was around 19 years for CAI graduates and around 26 years for CQPI graduates - the research findings are similar for aspects related to the size of enterprises (Table I.19 in Annex A).

- 70 per cent of CQPI graduates are employed in medium and large-scale enterprises (100 or more employees);
- wage levels rise in line with the size of the

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1. Estudo com ex alunos do CAI e CQPI op cit. Relatorio II CQPI by Elenice M. Leite. The study focuses on groups trained in July 1979 in the 16 schools mentioned above, that is to say a total of 596 graduates.
2. Both the apprenticeship programme (CAI) and the vocational training courses (CQPI) prepare skilled workers. See Annex B.

enterprise;
- levels of utilisation of training decline however with the size of the enterprise.

At the technician level, a research study carried out in 1978 covering 1 880 graduates of SENAI-SP technical courses - 1 383 technical school graduates (HP) and 470 from CQP-IV (output of technical courses) - representing 64 per cent of those who completed the courses in the period 1968-77, showed that:(1)

- almost 80 per cent of CQP-IV graduates (technician training course) were associated with large-scale companies, a result consistent with the fact that most of them followed the course as employees or with the sponsorship of such companies;
- the majority (52 per cent) of technical school (HP) graduates were also employed in large companies, though to a lesser extent than CQP-IV graduates;
- only 30 per cent of women graduates, however, were employed in large companies, probably because many of them had been trained in three specialisations - textiles, ceramics and graphics - all three being industries with a high proportion of small-scale enterprises. Moreover, it is well known that even highly-skilled women are subject to gross discrimination in the labour market(2) and to some extent represent a passive "surplus" to be exploited by smaller companies;
- in the case of technical school graduates (HP) the differential between female and male wages, while existing across the board, is greater in the case of micro and small-scale enterprises;
- wage differentials also exist in all cases

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1. Table I.20 in Annex A.
2. LEWIN, H. Educaçao e força de trabalho feminina no Brasil. Cadernos de Pesquisa, Fundaçao Carlos Chagas,(32) Feb. 1980.

between HP (formal studies) and CQP-IV (technical training) graduates in favour of the latter, basically reflecting differences in age/experience between the two groups; earnings tend to increase, however, in direct relationship to the size of the company, except in the case of proprietors and partners, a feature of micro-enterprises.

Finally, SENAI-SP has conducted various studies on the profile of its student population. The most recent survey, carried out in June 1980, covered close on 19 000 apprentices and 27 000 students attending other courses run by the agency. Almost two-thirds of apprentices (61 per cent) were sponsored by large-scale companies (500 or more employees), especially in the metal-mechanics branches. Since 1981, the student population attending training courses has been classified on the basis of statistics relating to the size of the enterprise. The majority (70 per cent or more) have proved to be employees of large-scale enterprises.

The results of all these studies can be summarised as follows:

- the absorption of SENAI graduates by large-scale enterprises (500 or more employees) is, in effect, disproportionate to the latter's share in overall employment and likewise in the employment of technical and skilled personnel (Table 3.8);
- this bias reflects the heavy concentration of SENAI activities in the metal products and machinery field, accounting for over half of the total enrolment for its courses: the greatest concentration (62 per cent) of skilled personnel in São Paulo industry is also in this field which is dominated by large-scale enterprises;
- the "channelling" of SENAI students into large companies takes place, in fact, prior to the course, since large firms finance almost two-thirds of SENAI's apprentices and invest relatively more in training; large companies,

Table 3.8

The São Paulo industrial work force and SENAI-SP graduates, by size of enterprise - summary

		Size of enterprise (number of employees)				Total (100%)
		Micro (0-4) %	Small (5-99) %	Medium (100-499) %	Large (500 or more) %	
Distribution of the work force in São Paulo industry (a)	Total (1976-77)	-	31	34	35	1 119 335
	Skilled (1976-77)	-	40	31	29	183 579
	Technicians (1976-77)	-	18	33 *	49	24 306
	Lathe operators (1976)	0.3 *	17 *	30	52	5 532
Destination of SENAI-SP graduates (b)	CAI - Lathe operator (1976)	0.3 *	18 *	32	50	2 104
	CAI - Fitter (1982)	5	25	16	54	251
	CAI - General mechanic (1982)	6	20	18	56	362
	CQP-I - Lathe operator (1982)	8	25	26	41	228
	CQP-I - Fitter (1982)	6	24	20	51	298
	HP - Technicians (1978)	4	23	21	52	1 089
	CQP-IV - Technicians (1978)	2	5	14	79	432
Origins of SENAI-SP students	CAI - student-employees ** (1980)	10		29	61	11 379
	Training - students completing course (1980)	6		20	74	110 244

Source: (a) SENAI-SP surveys in the capital city in 1976-77; in the case of lathe operators, study on graduates conducted in 1976.

(b) Studies on ex-students, covered in more detail in this chapter.

(c) SENAI-SP, School Statistics.

* In the distribution of lathe operators (1976), "micro-enterprise" includes up to 10 employees and "small" 10-99; the other classes follow the general rule.

** Apprentices who are being paid by their enterprise while following the course.

owing to statutory requirements, finance more apprentices than they can absorb, so that small firms benefit from the "overflow" from their investment in vocational training (Table 3.8);

- as soon as their training enables them to choose, SENAI graduates prefer to work in large companies, because the latter pay them higher wages, and provide benefits such as medical assistance, meals and subsidised transport. All the studies show that wages and working conditions are of crucial importance in determining whether ex-students accept or turn down a specific job, less importance being attached to the utilisation of the training they have received. Those who enter small firms could therefore be considered as "leftovers";
- small companies make more use of the knowledge acquired by ex-students; on the other hand, graduates' earnings in such companies only reach a satisfactory level when they rise to the position of partner or proprietor, generally in micro-enterprises.
- The performance of ex-students is certainly one of the reasons for the favourable evaluation of SENAI by small-scale enterprises - those who benefit from its activities of course. But the fact is that most of them are not really familiar with the agency and what it has to offer, owing to negligence on both sides: by SENAI because it cultivates contacts that are potentially more productive, that is to say with large companies few in number and spatially concentrated; and by smaller companies as a result of disinformation, lack of funds and/or lack of interest in promoting vocational training.
- Although they seem to invest less in vocational training, small-scale enterprises employ proportionately more skilled workers than medium and large-scale enterprises. How then, do they meet their demand for skilled manpower? They

"train on the job" and/or "recruit personnel with experience". It remains to be seen, however, what this means in practice.

SUMMARY AND CONCLUSIONS TO PART I

An overall view of economic development in Brazil and the State of São Paulo from 1940 onwards has been presented, drawing a number of implications for the industrial sector in general and for small-scale industry in particular. One of the major aspects in this regard is the process of *concentration of capital* in industry, which occurs in two mutually reinforcing dimensions:

- *spatial*, that is to say the concentration of activities in particular areas because of so-called "external economies" or "advantages of agglomeration" such as: proximity to the supplier or consumer market, access to public, financial, commercial and industrial services;
- *technical* or entrepreneurial, that is to say concentration in increasingly larger establishments owing to the "economies of scale" to be derived from a larger volume of production.

In Brazil, capital is concentrated spatially in São Paulo, especially in its metropolitan area.(1) This process of concentration accelerated from 1930 onwards as a result of the physical and political unification of the national market, a development that rebounded to the advantage of the State of São Paulo, which, as the centre of the coffee-growing region, had already attained the highest level of urbanisation and industrialisation in the country. From being a major exchange-exporting and

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1. Greater São Paulo, consisting of the capital city of the State and thirty-six adjacent municipalities.

producing centre, São Paulo became the centre of the interregional division of labour, leaving to the other states the task of supplying raw materials and foodstuffs and providing markets for São Paulo manufactured goods. Other states also became industrialised, but mainly in activities related to locational advantages (access to raw materials and consumer markets), while Sao Paulo acquired a virtual monopoly over industries in which advantages of scale were more important than locational advantages, that is to say in the most modern or dynamic industries, such as metal products and machinery, chemical goods and derivatives, and paper and cardboard.

The concentration/specialisation of industry in São Paulo, already discernible in the 1940s, became more pronounced in the following decades, resisting all efforts to establish "regional development poles" in the 1960s and 1970s.

In the State of São Paulo itself industry is spatially concentrated in the capital city and the neighbouring municipalities of Greater São Paulo; in addition, industry has been expanding in a number of municipal districts or regions which, though located in the interior, are really extensions of the main metropolitan industrial nuclei - e.g. Baixada Santista, Vale do Paraiba and Sorocaba/Campinas.

From the point of view of technical concentration of capital, the 1950s - especially the second half of the decade - may be seen as a milestone in Brazil's capitalist development. In effect, the industrial sector had been spearheading the expansion of the Brazilian economy since the end of the Second World War, but it was only from 1956 onwards that the process of import substitution intensified and accelerated as a result of the establishment of industries producing consumer durables (motor vehicles, household electrical appliances), capital goods (machinery and equipment) and intermediate goods (iron and steel, chemical goods, rubber, cellulose and paper). The industrial sector then achieved a genuine "leap forward", in terms of both capital accumulation and diversification of productive capacity.

The expansion of these high-technology industries occurred chiefly through the intervention of large foreign corporations, accelerating the process of concentration of capital in both technical and spatial terms. At the same time, the diversification and general expansion of productive capacity - through a combination of "new products" and "changes of process" - created openings for large numbers of small-scale enterprises, competing with or complementary or subordinate to large corporations, depending on the characteristics of each industry.

It may thus be concluded that the pattern of accumulation initiated in the 1950s - and gradually reinforced in the subsequent periods - also laid different bases for interlinking small, medium and large-scale capital from those predominating in the early stages of industrialisation. Small and medium-scale enterprises lost their standing as independent and competitive producers and gradually came to exist and survive merely in complementarity to, dependence on or subordination to large-scale enterprises.

It is in this context that we must seek to explain the presence and persistence of small-scale enterprises in the Brazilian industrial structure, refuting prophecies concerning their probable disappearance or annihilation. In the last thirty years, phases of economic euphoria have alternated in Brazil with longer periods of deceleration or recession.

Small-scale enterprises, as a segment of the market, have more or less maintained their share in industrial activity: in global terms, the participation of small companies in the total number of establishments, in employment, wages and in the value added of industry has remained relatively stable, at least since 1950, in spite of the trend towards economic concentration and oligopoly in the last few decades.

This finding enhances the importance of starting a study of small-scale enterprises looking at their "environment" and at the "macro-economic" conditions (in the international and national economy, and in the sector and industry to which they belong) -which affect their prospects for survival or expansion.

With this end in view, an analysis was undertaken for Brazil as a whole, the State of São Paulo and the capital city, of the share of specific industries in the overall industrial structure, and of small-scale enterprises (5-99 persons) in each industry, in terms of the number of establishments, manpower employed and the gross output.

It was possible through this analysis to identify the industries that played a leading role in the industrial structure in the last decade and in which small-scale enterprises also played a considerable role, i.e.:

- non-metallic minerals
- metallurgy
- machinery industry (machine and machine tools)
- electrical and electronic equipment
- transport equipment
- chemicals
- plastics
- textiles
- clothing, footwear and woven goods
- food manufacturing.

Next, a "qualitative" analysis of industrial structure was carried out, taking the following aspects into consideration:

- degree of technological concentration or the weight of large-scale enterprises in the industry's activity, measured in terms of the average size of establishments;
- average productivity, in terms of the value added in the industry divided by the number of persons employed in production;
- technological density, measured by the ratio of middle and higher-level technicians engaged in productive activities to the total work force.

Our conclusion is that in terms of their possible relevance to the objectives of this study, only four specific industries could be singled out in the industrial structure of the capital city: 12 - machinery industry; 13 - electrical and communication equipment; 25 - clothing; and 29 - food manufacturing. These are industries whose performance in the last decade has been above the average and in which small-scale enterprises seem to have equalled or bettered the performance of industry as a whole. Two of them - 12 and 13 - are theoretically characterised by oligopolistic structures, with a high level of technological concentration, large companies playing a dominant role, considerable technological complexity and a high proportion of foreign capital. The structure of the clothing industry (25) is basically non-oligopolistic, with unsophisticated technology, a predominance of small-scale enterprises and Brazilian companies playing a leading role. The structure of the food manufacturing (29) is "mixed": it is led by large companies, mostly multinationals, but there are a large number of small and medium-scale enterprises widely dispersed in local markets; marked technological discontinuities are therefore discernible.

As far as education is concerned Brazil experienced a sharp rise in the level of education of its population since the 1950s. But in spite of the far-reaching changes in the country's industrial structure, the structure of the labour force has changed little and unskilled labour still represents the backbone of the economy.

On the other hand, continuously higher levels of education are being demanded of job-seekers and this, in turn, has led to a greater demand for education by individuals. According to some authors, this trend is not due to an increase in the amount of skill needed for the job, but is chiefly a mechanism for regulating the volume of the labour force and a means of social selection. From this standpoint, education plays an important role in providing individuals with a "cultural capital" that qualifies them, to an even greater extent than their technical competence, for entry to the most prestigious - and best paid - occupations in the social hierarchy.

In Brazil, and even in São Paulo, the major problem confronting formal education is its inability not so much to train workers - a subject of heated controversy - but to reach a large proportion of the population. In spite of the progress made, the educational level of the population and work force is very low in terms of statutory minimum (4 years until 1971 and 8 years thereafter). Thus, a large proportion of the population do not even receive the basic elements of education that are assumed to make the individual more "trainable" or adaptable to the world of work.

As far as small-scale enterprises are concerned, there is little evidence of any great difference in the situation. The limited data available indicate that, at least in the State of São Paulo, the level of education of personnel employed in small companies is not lower than that of employees in medium and large-scale companies. Assuming that these data are correct, one should investigate to what extent this is linked to the greater polyvalence that is supposed to exist in small-scale enterprises.

In the case of small-scale entrepreneurs, there is evidence that the most recent generation has been taking advantage of the increase in higher education facilities, especially in the fields of engineering, economics and administration. It is not clear, however, to what extent such courses actually increase the "technical capacity" of entrepreneurs or serve, above all, to "qualify" them for entry into the class of executives and bureaucrats that dominates the business world and to enhance their "cultural capital", for example by enabling them to cultivate certain modes of expression, to acquire information and establish social relations that may prove useful to their company.

In view of the shortcomings noted in formal education, the preparation of human resources for the labour market has been undertaken to a large extent and with relative success by a "parallel system" of vocational education. In some cases, vocational training has gone beyond mere preparation for work, achieving results unattainable by formal education in terms of improving the individual's prospects in the labour market and his standards of living.

This "parallel system" consists of a large number of public and private agencies, incorporated since 1976 in the SNFMO (National Manpower Training System), among which special mention should be made of SENAI and SENAC, which are run by the business community.

In addition to these, there is the so-called "independent vocational education" system, consisting of private technical schools and, specifically in the case of small-scale enterprises, entities providing support and/or consultancy services.

It emerges from a study of the data available on the various agencies belonging to the "parallel vocational training system" in the State of São Paulo that, in principle, their activities are sufficient to meet the bulk of the demand for skilled or specialised manpower for the different levels of industry: production, technology, management.

There is no information, however, concerning the quality of these services, from the standpoint of enterprises in general and small-scale enterprises in particular. Indeed, in the case of the latter, it is difficult to know whether they are actually assisted by the bodies specifically established for that purpose.

SENAI-SP has some qualitative and quantitative information concerning its assistance to enterprises of different sizes, from evaluation studies carried out from 1975 onwards. On the whole, such studies indicate that SENAI is best known and utilised by large companies, with which it has better contacts and which are more likely to approach it for assistance.

This bias is largely due to the heavy concentration of SENAI-SP activities in the metal-machinery industry, characterised by the predominance of large-scale enterprises and the greatest concentration of skilled manpower in São Paulo industry.

Such companies sponsor most of the junior apprentices at SENAI, promote a large proportion of training programmes and receive in return the proceeds of their investment. It is a fact that, when given a choice - and SENAI graduates are generally in a position to choose - workers prefer large companies, which pay them higher wages and offer a series of additional benefits, although they do not exploit their potential to the same extent. It is the smaller companies that give SENAI graduates the most scope for putting their training into practice, an advantage that evidently does not outweigh the prospect of earning more.

Obviously, payment of lower wages is not a "perverse" policy on the part of small-scale enterprises but is due to their subordinate or dependent position in the market, as analysed above.

Lower wages certainly make it more difficult for small companies to recruit skilled manpower in general and not only SENAI graduates. But small companies somehow manage to obtain the manpower they need, since they employ a higher proportion of skilled workers than medium and large-scale companies and do not usually mention a lack of such manpower among their major problems. This, however, deserves further investigation.

PART II

THE FIRM, THE ENTREPRENEURS AND THE EMPLOYEES

The macroeconomic analysis has shown the important role of the small firm in the Brazilian industrial structure. In São Paulo, three firms out of five are small; they employ nearly 40 per cent of the total labour force and produce a third of the total production. What is remarkable is that these figures have remained stable over the years in spite of the Brazilian policy of industrialisation based to a great extent on large-scale enterprises. This relative stability is due, as we have seen, to the very specific role that small firms play in the industrial fabric: that is to say on the one hand they work for and complement large-scale enterprises, hence giving them some sort of operational flexibility, and on the other hand they cater for some of the very specific markets that big enterprises cannot be bothered to cover.

Small firms also employ large numbers of skilled workers and employees and yet they do not seem to make much use of existing vocational training institutions. The question thus arises: How is their manpower trained?

To find out more about certain aspects, such as "What do small firms produce and for whom? What are their relations with other enterprises? What are their specific strategies for survival? What are the characteristics of entrepreneurs? Does their educational and training background have an impact on the performance of their firms?" We felt it necessary to go beyond macroeconomic analysis and to undertake a survey at the firm level.

The second part of this study presents the results of the survey that has been carried out in 1983 on 100 small firms in three industrial sectors of the city of São Paulo: clothing, mechanical goods and electronics. We shall first present the survey, then the characteristics of the firms, the entrepreneurs and their employees.

CHAPTER IV

THE SURVEY

A study of the relationships between education, employment and work in small firms required us to analyse what sort of entrepreneur is running what sort of firm and the kind of manpower it employs. A survey has been carried out within the firms, looking at each firm's characteristics, and a profile drawn of the entrepreneur and the employees:

- the firms' characteristics: The questions we wanted to investigate are: what do they produce, for whom and with what equipment and technology; when were they founded and how do they perform; what is their personnel policy in terms of number of persons employed, occupational structure, training and wage policy.
- the entrepreneurs' profile: who are the persons that create and develop enterprises; what is their family, educational and other background; how did they learn their job - in schools, in universities, in other firms; what is their professional itinerary.
- the employees' profile: it is not enough to ask employers what their personnel policy is - their answers have to be checked against the actual profile of their employees, looking at their age, sex, education and training background and also their salary.

In 1980, there were more than 40 000 small industrial firms just in the State of São Paulo. It would have been extremely difficult and costly to draw a representative sample of such a large number of firms engaged in many different activities. We therefore had to delineate the scope of our research both industry-wise and geographically and define our target population. We then selected a representative sample of firms and employees within firms from a listing of enterprises that was available for the year 1981.

The sampling frame will be presented below as well as some of the difficulties that were faced when carrying out the survey.

4.1 Scope of the research

4.1.1 Selection of industries and sub-sectors

Industries and sectors within industries were selected bearing in mind that given its objective, the research should:

- focus on manufacturing industry, construction or repair services;
- give preference to dynamic activities having a high potential for employment creation;
- allow the comparison between industries of very different technological levels;
- cover the most significant fields in terms of SENAI training activities.

With these principles in mind, a comparative study was undertaken of the characteristics and performance of different industries in Brazil and São Paulo, which is presented in Part I. It concluded that it would be best to select the following industries: metal products and machinery, electrical and communication equipment, clothing and footwear.

In the national accounting system, an "industry" clearly includes very different types of economic activities. It was therefore necessary to select sub-industries or "sectors" within each industry, applying the following criteria. The "sectors" had to:

- correspond to a SENAI-SP priority area;

- represent a significant part of the respective industry in terms of number of establishments, employees and qualified manpower;
- include a large, above-average, proportion of small firms.

Accordingly, the following sectors were selected:

- in metal products and machinery: manufacture of spare parts accessories, apparatus and tools for industrial machinery, such as flanges, bearings, power hammers, blades and lathing, milling and tooling press (Group 12.32 in the national accounts);
- in electrical and communications equipment: manufacture of electronic equipment (13.70) and of communication material (13.80) including spare parts and accessories, radio and television broadcast receivers, microphones, capacitors, VHF converters, television or radio aerials, and other electronic equipment;
- in clothing and footwear: manufacture of clothes (25.10).

In the remainder of this document we refer to these three sectors as mechanical goods or mechanics, clothing and electronics.

4.1.2 Selection of the geographical area

It was decided to carry out the survey in the municipality of São Paulo in view of:

- the high share in the State's industrial activity of this municipality (nearly 60 per cent of total establishments and employees);
- the great diversification of its industry;
- the availability of data on the area, making it easier to obtain a listing of enterprises and carry out preliminary studies;
- facility of transport, communication and relatively easy access to enterprises.

The municipality of São Paulo is divided into 56 sub-districts and five zones - Centre, North, South, East and West.(1) All the studies on the state Capital's

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1. The composition of these zones does not follow any

economy show that these zones correspond to different stages in the process of urban and industrial development. The city's industrial activity started in the central Zone, then spread to the East and West Zones, and eventually to the North and South.

In order to avoid too much travelling throughout the city, it was decided to select two zones for each industrial sector, taking into account:

- their relative importance in the sector's activity (in terms of number of establishments, employees and skilled personnel);
- the participation of small firms (measured with the same indicators);
- their industrial specificity (in the industrialisation process of São Paulo).

The zones selected for each sector are:

- for clothing: South and Centre;
- for electronics: South and Centre;
- for mechanical goods: South and East.

4.1.3 Definition of the size of enterprises (stratum)

Following the SENAI-SP definition and criteria for attending to industry, small firms were defined as those employing 5 to 99 people. Using the same criteria, they were classified in three categories of size or strata for comparative purposes:

Stratum 1 : 15-19 employees
Stratum 2 : 20-49 employees
Stratum 3 : 50-99 employees.

Note 1. continued from previous page:
official or administerative criteria. Zones have initially been defined to study specifically the labour market in the city of São Paulo. Each zone is made up of a number of districts and subdistricts, as follows:

North Zone - Casa Verde, Santana, Tucuruvi, Vila Guilherme, Vila Maria, Vila Nova Cachoeirinha; South Zone - Capela do Socorro, Ibirapuera, Indianopolis, Ipiranga, Jabaquara, Jardim Paulista, San Amaro, Vila Mariana, Saude, Parelheiros; East Zone - Alto da Mooca, Belenzinho, Cangaiba, Penha de França, Tatuape, Vila Formosa, Vila Matilde, Vila Prudente, Ermelino Matarazzo, Sao Miguel Paulista, Itaquera, Guaianazes; West Zone - Barra Funda, Brasilandia, Butant Jaguara, Jardim America, Lapa, Limao, Nossa Senhora do O, Perdizes, Pinheiros, Pirituba, Vila Madalena, Jaragua, Perus; Centre Zone - Aclimaçao, Bela Vista, Bom Retiro, Bras, Cambuci, Cerqueira Cesar, Consolaçao, Liberdade, Mooca, Pari, Santa Cecilia, Santa Ifigenia.

4.2 The target population

The target population, defined using the above-mention criteria, includes 1 412 establishment, distributed as follows:

- in clothing: 1 065 establishments of 5-99 employees located in the Centre and South Zones of the State's capital, manufacturing clothes;
- in electronics: 123 establishments of 5-99 employees located in the Centre and South Zone of the city, producing electronic and communication equipment;
- in mechanics: 224 establishments of 5-99 employees located in the South and East Zone of the City, manufacturing spare parts, accessories and tools for industrial machinery.

This information is taken from the Survey and Listing prepared by SENAI-SP in 1980-81 covering all industrial enterprises employing more than 5 employees in the municipality of São Paulo.

4.3 Sampling

4.3.1 The sample of firms

On the basis of the above-mentioned listing of enterprises, the sampling frame was prepared classifying all industrial establishments by sector of activity, size and geographic location (Zone). A random sample of 100 firms was drawn and stratified according to these three criteria:

- industrial sector: it was decided to include 40 firms in clothing and 30 in each of the two other sectors, electronics and mechanical goods. Previous field work had demonstrated that the non-response rate amongst small firms could be as high as 50 per cent. It was thus necessary to draw a parallel sample in each sector of activity and plan a replacement for each firm drawn in the first sample. This means that, in all, samples of 90, 60 and 40 firms were drawn in clothing, electronics and mechanics respectively.

- size of firm: within each size stratum firms were selected with a uniform probability;
- zone: in the clothing sector only so as to ensure a fair representation of firms located in the South Zone.

The original sample design is shown in Table 4.1

After preliminary contacts had been made and during the field work a number of firms had to be eliminated from our original sample. These were:

- all the establishments which were found to be subsidiaries of large industrial concerns (five in clothing; nine in electronics);
- firms which had disappeared or changed activity between 1980-81 and 1983 when the survey was conducted (twelve in clothing, four in electronics);
- firms which were found to be subsidiaries of large transnational groups and therefore could not be considered as "small firms" within the definition of our research;(1)
- those establishments which in 1981 were already at the upper limit of our target population and were found to employ well over 100 employees in 1983 (three in clothing, three in electronics;(2)
- firms which did not agree to be surveyed; managers who refused to be interviewed or have their employees interviewed (twelve in clothing, eight in mechanical goods and one in electronics).

The final sample of firms interviewed is therefore different from the one planned originally, although

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1. Comparing these firms with the other small-scale enterprises might have been interesting but not really the object of our research.
2. The non-response rate in electronics was low thanks to the very active recommendation given by the Association of Electric and Electronic Industries (ABINEE).

sampling fractions appear the same:(1)

- 13 per cent of the mechanical firms operating in the South and East Zone;
- 24 per cent of the firms in electronics in the Centre and South Zone;
- 4 per cent of the firms in the clothing sector in the South Zone (11 per cent) and Centre Zone (3 per cent).

Finally, if we compare the sample design on the basis of 1981 data with what we actually observed in 1983, other discrepancies can be noted:

- most of the firms surveyed (63 per cent) have reduced their manpower, a trend which is more often observed in mechanical goods and electronics where respectively 67 per cent and 80 per cent of the firms have decreased their staff numbers;
- only a third of the firms had expanded and most of these were in the clothing sector;
- the remaining 4 per cent maintained the number of their employees at a stable level.

It should be stressed, moreover, that while no firm in our sample was supposed to have fewer than five employees, in actual fact 11 firms - three in clothing, one in electronics and seven in mechanical goods - reduced their personnel in such a way that they belonged to the 0-5 employees bracket by 1983.

4.3.2 The sample of employees

Within the firms, 278 employees were interviewed: 103 in clothing, 87 in electronics and 88 in mechanical

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1. Obviously by including in our sample only those firms who survived between 1981 and 1983, we necessarily introduced a certain bias in our analysis. Indeed, we can assume that those firms that survived these two years have already passed a critical stage and are not entirely representative of small firms. It is impossible, however, to quantify the bias.

Table 4.1

Sampling of firms: Theoretical and actual sample

Sector	Stratum	Target population	Theoretical sample	Theoretical sampling fractions (%)	Actual sample (distribution according to numbers employed in 1981)	Actual sampling fractions (%)	Actual sample (distribution according to numbers employed in 1983)
Clothing	1	646	23	3.6	20	3.1	16
	2	306	12	3.8	12	3.9	17
	3	113	5	4.4	8	7.1	7
	Sub-total	1 065	40	3.8	40	3.8	40
Electronics	1	44	11	24.4	11	25.0	14
	2	49	12	24.4	12	24.5	12
	3	30	7	24.4	7	23.5	4
	Sub-total	123	30	24.4	30	24.5	30
Mechanics	1	120	16	13.5	16	13.3	19
	2	76	10	13.5	10	13.2	9
	3	28	4	13.5	4	14.2	2
	Sub-total	224	30	13.5	30	13.4	30
Total		1 412	100	7.0	100	7.1	100

goods. Their breakdown by occupational level is as follows:

(2) semi-skilled workers: 53
(3) heads of section (supervisors of semi-skilled workers): 24
(4) skilled workers: 113
(5) foremen (supervisors of skilled workers): 45
(6-7) technicians: 36
  6 practical technicians (with no technical education or training): 13
  7 middle-level technicians (graduates of secondary technical schools): 23
(8) professional (engineers or other graduate professionals): 7.(1)

Initially, employees within the firms were to be selected at random among semi-skilled, skilled and highly-skilled workers. The preference given to skilled and highly-skilled workers stems from our objective of analysing the relationship between education, training and employment. Sampling fractions were fixed by size of firms and occupational level so as to ensure a reasonable sample size (the bigger the firm, the lower the sampling fraction), as well as a sufficient number of highly-skilled personnel in our sample (as we saw in Part I, there are few highly-skilled personnel in small firms).

Size of firm Strata	Sampling fraction Semi-skilled/skilled operators (level 2 to 5)	Technicians/ engineers (level 6 to 8)
1	50 %	100 %
2	20 %	100 %
3	10 %	50 %

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1. This occupational level was only found in the electronic firms.

The over-representation of technicians and engineers in our sample was in fact achieved, but it was not possible to keep to the planned sampling fractions. The difference between the actual sample and the one planned originally is due to several factors:

1. The sampling fractions had been fixed on the basis of data available on the occupational structure of small firms in 1976 (SENAI-SP survey). There has been, however, a significant change in the number (reduction) and composition of the personnel employed since then.
2. Given the small number of employees in each firm, an increase or decrease of just one or two of the people included in the sample significantly altered the sampling fraction. Moreover, some firms did not employ any skilled workers, or even any workers at all, at the time of the survey.
3. More often than not, managers restricted the number of employees to be interviewed in their firm in view of the disturbance it created in the production process.
4. It has not always been possible to avoid interference from the managers in the selection of employees to be interviewed. There are clear indications that employers excluded from our sample any respondant that could be considered problematical (undeclared workers, or workers executing tasks different from the one for which they have been registered). It has been comparatively easier to obtain access to heads of section, supervisors, foremen and technicians, i.e. middle- and higher-level personnel, since they were considered to be "reliable personnel" by the manager and could also leave the shop floor without disrupting production (which was not always the case for anybody operating a machine or working on an "assembly line".

Altogether, it was possible to interview 11 per cent of the employees working in the firms in our sample. The sampling fraction varies according to the size of the firm from 19 per cent in the smallest firms (Stratum 1) to

7.5 per cent in firms having between 49 and 100 employees. As a result of the difficulties mentioned above, the actual sampling fraction also varies according to the sector concerned from 9 per cent in clothing, 11 per cent in electronics and 16 per cent in mechanical goods. The structure of the sample by occupational level is as follows:

Occupational level	Occupational structure in the firms visited	Structure of our sample
Unskilled workers (1)	4.7 %	-
Semi-skilled workers (2)	36.0 %	19.1 %
Heads of sections/ (3) supervisors of semi-skilled workers	1.3 %	8.6 %
Skilled workers (4)	25.7 %	40.6 %
Foremen of skilled (5) workers	2.8 %	16.2 %
Technicians (6-7)	4.0 %	13.0 %
Professionals	0.5 %	2.5 %
Other (sales/admin.)	25.0 %	-
Total	100.0 %	100.0 %
Number	2 469	278

4.4 Field work

4.4.1 Duration

The field work took place between September and December 1983, amounting to 55 days' work for a team of five interviewers. On average, the completion of all the questionnaires in one firm took an interviewer nearly three days. Each contact involved more than one visit to complete all the interviews.

4.4.2 Survey instruments

Three types of questionnaires were designed and applied in each firm:

Table 4.2

Employees: Composition of the sample of employees and sampling fractions by occupational level and size of firms

Occupational Level		Employees in the firms visited(a)				Employees interviewed(b)				Sampling fractions(%)			
		Strata				Strata				Strata			
		1	2	3	Total	1	2	3	Total	1	2	3	Total
Semi-skilled	2	174	384	332	890	16	29	8	53	9.2	7.6	2.4	6.0
Heads of section	3	9	7	15	31	8	7	9	24	88.9	100.0	60.0	77.4
Skilled	4	140	325	170	635	41	48	24	113	29.3	14.8	14.1	17.8
Foremen	5	17	34	17	68	13	23	9	45	76.4	67.6	52.9	66.1
Sub-total		340	595	534	1 624	78	107	50	235	22.9	18.0	9.4	14.5
Technicians	6/7	12	56	32	100	6	19	11	36	50.0	33.9	34.4	36.0
Other	8	-	7	5	12	-	4	3	7	-	57.1	60.0	58.3
Sub-total		12	63	37	112	6	23	14	43	50.0	36.5	37.8	38.3
TOTAL		352	658	571	1 736	84	130	64	278	23.9	19.7	11.2	16.0

- Questionnaire I on the entrepreneur - aimed at the owner of the firm, the most senior partner and/or the person responsible for major decisions in the firm. Ninety-eight entrepeneurs answered this questionnaire in the 100 firms visited; two entrepreneurs refused to answer at the last minute, although they had already answered the questions on the firm and allowed their employees to be interviewed.
- Questionnaire II on the firm was applied in most cases to the owner of the firm or to one partner. Cases where the questionnaire was answered by an executive - accountant or personnel manager - are very rare. This questionnaire was filled in by all the 100 firms.
- Questionnaire III on the employees was addressed, as we have just seen, to employees of different levels directly involved in production. The number of employees interviewed in each firm varied according to the size and occupational structure of the firm; it also depended on the managers' good will. It ranges from one employee (in the smallest firm) to a maximum of six (Stratum 3). As mentioned above, this questionnaire has been applied to 278 employees in 97 firms: two firms did not have any workers involved in production (one in clothing and one in mechanics) and one manager did not allow his employees to be interviewed.

These questionnaires (available in Annex E) were prepared after a number of long interviews had been carried out in a few firms. On the basis of these interviews - which in reality constitute some firms' monographs - different items have been added or eliminated and open questions gradually replaced by closed questions. In this try-out period, ten firms - four in electronics, three in clothing and three in mechanics - were visited. The final questionnaire was tried out on the last visits.

It is quite obvious, from the description given above, that our sample cannot be considered as representative of all small firms in São Paulo, or entrepreneurs and even less so of the employees in such firms. Quite apart from the difficulties we encountered, it would have been difficult to draw a representative sample, given the small size of our sample and the large number of small firms in the city. Our approach has been essentially qualitative and methodological. We can reasonably assume, for example, that the very unstable segment of small enterprises (either those firms that are created and disappear in a year or casual workers) is not represented in our sample. Interesting information on the relatively stable segment of small firms can however be obtained from our survey. The analysis presented in the following chapters has been carried out by sector of activity (clothing, electronics and mechanics), and, where relevant, by size of firms:

Stratum 1 = 1-19 employees
Stratum 2 = 20-49 employees
Stratum 3 = 50-99 employees.

4.5 An outline of the industries selected

4.5.1 The place of the industries selected in the industrial structure of Brazil

(a) Clothing and footwear

This traditional activity played an important part in the country's industrial structure before the Second World War but declined in relative importance in the following decades until 1970, when it was given new impetus by the growth of the "fashion industry". A change thus occurred in the internal composition of the industry, of which footwear had been the main component until 1970; since then, clothing has increasingly taken the lead. In 1975, clothing proper accounted for more than half of the labour force and output value of the industry. The second largest group was footwear, with a third of the industry's labour force, and a quarter of its gross output (Table II.1, Annex A). Brazilian companies predominate, with a relatively small number of large-scale enterprises. According to the study by Tavares,(1) of the sample of 64 leading firms in the industry only five were foreign and only one of these was international; on the other hand, only nine were large-scale enterprises, of which seven were national, one foreign and one multinational. However, the structure is heterogeneous, with a predominance of large companies in areas where production standardisation is possible (as in the case of jeans), and of small-/medium-sized firms in areas more subject to changes in fashion.(2)

The success of firms, of any size, in the industry is closely related to marketing, which is particularly important in areas where the influence of fashion reduces the commercial life of the product.

Its capital/labour ratio is extremely low, so that a relatively small investment effort yields high capital returns and accumulation rates.(1) "Even in large companies, it is still rare to find any of the more recent technical innovations such as automatic sewing machines, and production continues to be based on the sewing machine/operator combination, with considerable dependence on direct manpower."(2)

The production process in the clothing industry is highly divisible, both from the global point of view and in terms of the work organisation proper. "All the creation and preparation work, including even cutting and modelling, can therefore easily be separated from the sewing process itself and has a major influence on the quality of the product. Moreover, the actual sewing process is highly divisible into a large number of small tasks."(2) All of this goes to show that typical occupations in the industry are predominantly "semi-

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1. TAVARES, N.C. et al. *Estrutura industrial e empresas lideres*. Rio de janeiro. FINEP. Mimeo 1978.
2. ABREU, Alice R. de Paiva. *O trabalho industrial a domicilio na industria de confeccão*. Doctoral thesis. USP, São Paulo 1980.

skilled".(1) Even the industrial seamstress described as a skilled worker once she is capable of making an entire article of clothing, tends to become increasingly a "sewer of parts" of the garment concerned (e.g. of pockets, collars, etc.).

These characteristics largely explain why the clothing and footwear industry depend to such a large extent on homeworkers for cutting and other tasks. Although this has always been the case, the trend seems to have become more marked in recent years, with the advent of the "fashion industry". The use of homeworkers makes the organisation of production more flexible - a basic requirement for the "manufacture of a highly diversified product with pronounced seasonal fluctuations".

This type of additional manpower also leads to considerable savings in fixed production costs, especially those concerning the labour factor.(2)

As a result, the proportion of women employed in the industry is growing, a trend that is also discernible in the case of other activities which allow women to contribute to the family budget without detriment to their duties as wife, mother and housewife.(2) It should also be noted that the clothing manufacturers make use of women's domestic "skill" or "penchant" for sewing, and this facilitates their recruitment with a minimum of experience and previous training, the latter generally being provided in crash courses or at the workplace itself.

(b) Metal products and machinery

This "modern" industry is almost entirely (93 per cent) devoted to the production of capital goods; its share in the industrial structure of the country only began to increase during the 1950s. Since then, it has maintained high growth rates, except during the 1962-67 period and in the past three years of severe recession.

More than one-third of its activity, in terms of establishments and employees, is concentrated in the

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1. See classification of occupations in Annex B.
2. ABREU, Op. cit.

repairs and maintenance field; this is followed by the manufacture of machinery and heavy equipment, which accounts for 28 per cent of establishments and about a quarter of the work force and gross output value (Table II.1, Annex A).

The metal products and machinery industry uses specialised and highly labour-intensive production processes, reflected in a low capital/labour ratio and high wage levels.(1) This industry shows the highest percentage of skilled personnel and technicians directly engaged in production: nearly 40 per cent of employees, more than double the average for the manufacturing industry as a whole (Part I).

As a result, the metal product and machinery industry tends to have the highest labour costs in industry and, conversely, the lowest gross profit ratio. "This is not because productivity is particularly low but because it is not high enough to offset the high wage level in production wages". This feature is particularly marked in the manufacture of machine-tools, which illustrates the characteristics of the industry more clearly than any other.

The industry is dominated by large-scale enterprises, especially multinational corporations. In his study on the leading companies in the industry, Tavares pointed out that of the 77 firms surveyed in this field, 33 were private Brazilian companies, 4 were public and 40 were foreign, 27 of the latter being transnational.

Despite the leading role of the large-scale enterprises, the average size of companies in the industry is relatively small, which implies that there is a considerable number of small- and medium-sized establishments in various fields of activity. There are even signs that the dynamism of the industry tended, until a few years ago, to favour smaller firms "which were able to grow at the same rate (as the large companies), as well as improve their relative position in terms of cash flow. These results reflect in particular the possibility of

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1. TAVARES, Op. cit.

small firms to take advantage of economies of scale in many markets, as well as the complementarity of the production of many small-scale enterprises that supply large companies."(1)

The industry as a whole, and particularly the manufacture of capital goods produced to order, is highly dependent on demand from the government and from state companies. The companies maintain that this dependency creates certain specific difficulties for the industry, in addition to the problem of instability of orders.

Attracted by the possibility of securing credits connected to supplies of equipment by foreign firms, companies frequently opt to import equipment which could be manufactured domestically. At any rate, fluctuations and the resultant unpredictability of the demand for capital goods produced to order tend to encourage diversification of product lines as a means of reducing risks, optimising the level of utilisation of installed capacity and thus increasing and maintaining profit margins (this is true of both nationals and foreign companies). This makes technical specialisation of production less likely, and leads to the proliferation of technology import licences, thus hampering the development of national technology.(1)

(c) Electrical and communication equipment

This industry also emerged in the 1950s and expanded as a result of the substitution for imported consumer durables. It was also one of the locomotives of the 1968-73 economic miracle, maintaining high growth rates until the late 1970s. Like the mechanical goods industry, it is one that has been hit the hardest by the current economic recession.

Leaving aside the maintenance sector, important only in terms of total number of firms, the leading segments in this industry are first electrical equipment and secondly communication equipment (Table II.1, Annex

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1. SEPLAN-SP O exame de politicas economicas setoriais. São Paulo, 1979

A). The industry actually has two distinct product lines: on the one hand, capital goods - in the manufacture of heavy electrical equipment - and, on the other, consumer durables - in the electronic sector.

This means that there is a certain lack of uniformity among the sectors belonging to this industry. Those that are more oriented towards the production of capital goods present characteristics similar to those of the machinery industry, with little standardisation, specialised and labour-intensive processes, and hence high labour costs.

The manufacture of electronic and communication equipment, on the other hand, is highly profitable, with standardised production processes leading to high productivity combined with relatively low wages.(1) In fact, 54 per cent of the manpower engaged in this activity is semi-skilled (the average for the overall manufacturing industry is 49 per cent); on the other hand, this sector employs the largest proportion of technicians and engineers - 7 per cent, against an average of 3 per cent for the manufacturing industry as a whole (Part I).

Of the 77 leading firms in the industry analysed by Tavares, 37 were private Brazilian companies and 40 were foreign: only one of the latter was not a multinational. The total number of large-scale enterprises (27) was not unduly high; but nearly all of them (25) were foreign firms. The sectors with Brazilian companies only accounted for just 2 per cent of total output.

4.5.2 The place of the selected industries in the industrial structure of São Paulo

(a) State of São Paulo

From a historical standpoint and as far as general characteristics are concerned, the foregoing analysis for Brazil as a whole also applies to the State of São Paulo, since the latter accounts for a large part of the industrial structure of the country (Part I). This section

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1. TAVARES, 1979. Op. cit.

reviews, for the three industries chosen, the main indicators analysed in the first part of this document, and which served as the basis for our selection.

- Share in the industrial structure: the metal product and machinery industry is the largest of the three in terms of the number of establishments (10 per cent), employees (14 per cent) and output value (10 per cent); clothing comes second in terms of the number of establishments (10 per cent) and employees (8 per cent), but electrical equipment and communication goods has the highest output value. These data refer to 1980; compared with 1970, all three industries show a stable and/or rising trend in the State's productive structure in terms of the various indicators mentioned (Table 4.3).
- Share of small establishments and technical concentration of production: compared with general industrial averages, the share of small establishments (5-99 employees) may be considered
  - high, in the clothing and footwear industry;
  - average, in the metal products and machinery industry;
  - low, in the electrical and communication equipment industry.

  These data are consistent with those for average establishment size, which indicate the degree of technical concentration of production, that is to say, the weight of large-scale enterprises in the productive structure of each industry: the industrial average is 49 employees per establishment, that of clothing is 39, the machinery industry 67, and the electrical equipment industry 90.
- Average productivity: as expected, the best performance was in the electrical equipment industry, where productivity was above the industrial average; the machinery industry came next but productivity in the clothing industry was less than half the general average. The

same trend was discernible among small establishments and in the case of electrical equipment they exceeded the average productivity for industry in general, and not just for their own industry.

- Technological density: the data on the number of engineers and technicians directly engaged in production were as expected: the mechanical goods and electrical equipment industries show a technological level well above the industrial average while clothing is at the other extreme. A similar picture was obtained for the small-scale establishments in each industry.
- Economic situation: the data available for Sao Paulo show that the mechanical goods and electrical equipment industries are among those most severely affected by the recession, with a 14 per cent drop in employment between 1980 and 1981, where the drop was only 0.5 per cent for clothing and footwear; the general average for the manufacturing industry was -5 per cent.

(b) Municipal district of São Paulo

- Share in the industrial structure: the relative importance of the selected industries is even greater than in the productive structure of the State. Altogether, they account for about a third of establishments and employees and about a half of skilled(1) industrial manpower in the municipal district. Clothing is the largest of the three in terms of total establishments, electrical equipment in terms of total employees and the machinery industry in terms of skilled personnel (Table 4.4).
- Share of small establishments: the trend observed in the State is also discernible in the municipal district. In clothing, small-scale

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1. See definition in Annex B.

Table 4.3

State of São Paulo: Description of the electrical and communication equipment industry the clothing, footwear and woven articles branch and the metal products and machinery industries

Variables	Indicators	Industries Chosen				
		Electrical and communication equipment	Clothing, footwear and woven articles	Metal products and machinery	Sub-total	Total Manufacturing industry
Share of the industry in the industrial structure	In 1980:					(n = 100%)
	- establishments	4 %	10 %	10 %	24 %	45 752
	- employees	7 %	8 %	14 %	29 %	2 231 219
	- output value (*)	7 %	3 %	10 %	20 %	5 024 548
	In 1970:					(n = 100%)
	- establishments	4 %	9 %	7 %	20 %	28 634
	- employees	7 %	6 %	9 %	22 %	1 243 364
	- output value (*)	7 %	3 %	7 %	17 %	64 752
Share of small establishments (5-99 employees)	In 1980:					
	- establishments	79 %	93 %	84 %	-	89 %
	- employees	25 %	49 %	37 %	-	40 %
	- output value (*)	19 %	43 %	26 %	-	28 %
Technical concentration of production	Employees per establishment = average size of establishment	90	39	67	-	49
Average productivity	Industrial value added/ number of employees directly engaged in production					
	- Total	Cr$ 113.03	Cr$ 48.55	Cr$ 102.91	-	Cr$ 110.16
	- Small establishments	Cr$ 116.74	Cr$ 49.95	Cr$ 89.94	-	Cr$ 93.62
Technological density	Ratio of middle and higher-level technicians to total employees(**)					
	- Total in the industry	7 %	0.1 %	7 %	-	3 %
	- Small establishments	5 %	0.2 %	5 %	-	2 %
Economic Situation	Variations in employment levels between 1980-81	-14 %	-0.5 %	14 %	-	5 %

Source: See tables in Chapters 1 and 2

(*) in millions of cruzeiros
(**) data concerning the city of São Paulo

establishments have the largest share, with 92 per cent of total establishments, 50 per cent of employees and 60 per cent of skilled labour; these figures are far above the industrial average (86 per cent, 30 per cent and 40 per cent respectively). The percentages for the machinery industry are close to these parameters, while those for electrical equipment are much lower (Table 4.4).

- Share of the selected sectors in each industry: as stated above, it was decided to focus on one sector in each industry so as to derive the maximum benefit from the research project. In clothing, the sector chosen - ready-made and protective clothing - accounts for about 80 per cent of the activity of the industry in the municipal district in terms of establishments, employees and skilled labour; these levels remain unchanged even if only small-scale establishments are considered (Table II.2, Annex A). In the case of electrical and communication equipment, the sector selected, electronics, accounts for nearly a third of establishments and skilled labour and 46 per cent of total employees. In the metal product and machinery industry the sector chosen accounts for a third of establishments and about a fifth of total employees and skilled labour.
- Share of small establishmend in each selected sector: in the mechanical and clothing sectors, the proportion of small establishments is over 90 per cent; In electronics, however, although small establishments account for more than two-third of the total, their share in terms of employees and skilled labour is only 13 per cent. In any event, it was decided to include it in the study not so much for quantitative reasons but rather because of its growing importance in the Brazilian economy and the interest it has been attracting from SENAI and other vocational training institutions in the

Table 4.4

City of São Paulo - 1980: Manufacturing industry - total and selected industries
Number of establishments, employees and skilled personnel - total and small-scale enterprises

Selected Industries		(a) Small scale establishments (5-99 employees)		(b) Total(*)		a/b %
		N	%	N	%	%
Clothing, footwear and woven articles	EST	1 887	17.9	2 042	16.6	92.4
	EMP	43 570	16.6	87 265	9.9	19.9
	SP	11 341	22.7	18 956	15.1	59.8
Electrical and communication equipment	EST	648	6.1	854	7.0	75.9
	EMP	19 254	7.3	104 506	11.9	18.4
	SP	2 560	5.1	11 178	8.9	22.9
Mechanical goods	EST	982	9.3	1 164	9.5	84.4
	EMP	27 909	10.6	89 064	10.1	31.3
	SP	10 456	20.9	26 802	21.3	39.0
Subtotal	EST	3 517	33.3	4 060	33.1	86.6
	EMP	90 733	34.5	280 835	31.9	43.1
	SP	24 357	48.7	56 936	45.2	40.6
Total manufacturing industry(*)	EST	10 560	100.0	12 284	100.0	86.0
	EMP	262 341	100.0	880 709	100.0	29.8
	SP	49 949	100.0	125 830	100.0	39.7

Source: SENAI-SP

EST = establishments; EMP = employees (total); SP = skilled personnel

(*) establishments with 5 or more employees light of the industrial automation process.

- Zonal distribution of sectors in the city of São Paulo: clothing is found in the centre, electronics in the south, and the mechanical sector is divided between the south and east (Table II.3, Annex A). This distribution is in keeping with the history of the industrialisation of the municipal district. Industry in the State of São Paulo and in the municipal district itself spread from the central area, expanding first in an east-west direction, following local geographical features (the Tietê valley), with expansion to the north and south coming later on.

The largest industrial area is the southern zone, which accounts for 23 per cent of total establishments and 30 per cent of industrial employment in the municipal district. Modern industries predominate, especially metal-mechanical industries, which account for 55 per cent of employment and 16 per cent of establishments in the zone. The pattern of organisation is similar to that of neighbouring municipalities especially those of the ABCD, the main industrial nucleus of Greater São Paulo.

In the past, the central zone was the main industrial area of the municipal district; today, it ranks second in terms of employees (24 per cent), but it still has the greatest concentration of - mainly small-scale - establishments in the city (31 per cent); the principal activities in the area, in order of importance, are clothing and footwear, textiles, publishing and graphics, and metallurgy which, as a group, account for 54 per cent of employment and 61 per cent of industrial establishment in the area.

The eastern zone comes next, with 21 per cent of establishments and 19 per cent of employment. The structure is heterogeneous and includes traditional industries (such as textiles) and modern ones (such as electrical and communication equipment).

The share of employment in the western zone is the same as that in the east, but there are fewer establishments, reflecting the predominance of medium and large-scale plants in the area. The profile of this zone is similar to that of the southern zone, with a relatively greater specialisation in the metal product and machinery industries.

The northern zone has been developed more recently and its share in the municipal district's industry is modest - 10 per cent of establishments and 8 per cent of employment. It is also heterogeneous, including both modern (fabricated metal products and machinery) and traditional (clothing and footwear) industries.

4.5.3 Coverage by SENAI

An attempt was made in the first part of this document to assess SENAI's impact in general and on small-scale enterprises in particular. Here we will deal more specifically with its impact on the areas specially selected for the study.

The mechanical sector is far ahead of the others in terms of coverage by SENAI-SP: in 1982, it accounted for 31 per cent of all enrolled students and for 26 per cent of those completing various courses and training programmes offered by the institution in the State of São Paulo. The mechanical sector is of even greater consequence, if courses only are taken into account: the field contains 56 different specialisations, accounting for 68 per cent of overall enrolment for and completion of courses in the State (Table II.4, Annex A).

Electronics and clothing receive less coverage number-wise, but they may still be considered "well covered" by the institution, since it is active in at least 21 different specialisations.

The special importance given to mechanical training is consistent with the structure of skilled labour in the State: (according to surveys by SENAI-SP, nearly 40 per cent of all skilled workers in industry are employed in the mechanical goods industry. On the other hand, the relatively poor coverage of areas such as clothing regarding courses and training activities is offset by other forms of action. Since 1981, SENAI-SP has been operating a support unit for small-scale enterprises, which provides individualised technological assistance in such fields as production rationalisation, manufacturing methods, productivity, work preparation, costs, etc., based on analytical surveys carried out in each firm. In 1982, firms in the clothing industry, especially small-scale companies, accounted for 68 per cent of the programmes developed and 74 per cent of the time spent on consultancy services.

4.5.4 Summary

It may be concluded on the basis of the description presented in this section that the sectors selected for study reflect specific patterns and diverse forms of intervention of small-scale enterprises in the market, e.g.:

(a) Clothing

- A traditional sector within the clothing, footwear and woven articles industry, it has played an important role in the industrial structure of the country since the beginning of the century. By 1940, the share of the sector in overall activity had already declined considerably. It remained at that level until 1970, when the advent of the "fashion industry" instilled new life into the sector, which has been relatively less hard hit by the recent recession, which intensified in 1981.
- It is dominated by Brazilian companies, few of which are in the large-scale bracket; however, its structure is heterogeneous, with large firms predominating in areas where production standardisation is possible (as in the case of jeans) and small-medium-scale firms operating in areas more subject to changes in fashion.
- Primarily geared to the production of non-durable consumer goods, it is a typical example of a non-oligopolistic or competitive market structure, in which small firms can operate in an independent capacity, catering for marginal, popular or luxury and artisanal markets. Their performance, in this case, is

limited by the very nature of the market and by fluctuations in consumer income levels.

- It is characterised by low technology levels and low productivity; production is still largely based on the "sewing machine/operator" combination, greatly dependent on direct manpower.
- The work process is highly divisible and this, amongst other factors, enables firms to use home-based cutters and/or casual workers in the various stages of production, such as sewing, finishing and dyeing.
- In this connection, it was found that typical occupations in this sector, even skilled activities such as tailoring and designing, can be learnt easily and quickly, either at home or at the place of work. As a result, there has been an increase in the number of women employed in the sector.

(b) Electronics

- This modern sector is part of the electrical and communication equipment industry and came into being in the 1950s when the import substitution model was introduced. Its expansion peaked during the "miracle" years (1970-73), and high growth rates were maintained until the late 1970s; at present, however, it is one of the sectors most severely hit by the economic recession.
- It is dominated by foreign, mainly multinational, enterprises.
- Geared largely to the production of durable consumer goods, it is characterised by a high level of standardisation of production processes, high productivity and relatively low wages, since it depends to a large extent on semi-skilled labour. On the other hand, the high-level technology used in the sector calls for the employment of technicians and engineers in numbers far above the industrial average.

- It is a typical example of a mixed heterogeneous oligopolistic structure which, like pure oligopoly, involves major discontinuities of scale and of production techniques, and enables companies of various sizes to coexist. Small-scale enterprises tend to survive through dependence, subordination and integration with large-scale companies.

(c) Mechanical goods

- This modern sector, part of the industry of the same name, was also launched during the 1950s. In the past, it grew at a higher-than-average rate for the industry, but now it is one of the areas worst hit by the recession.
- It is dominated by large-scale companies, especially multinationals. The degree of technological concentration is, however, lower than in the case of electronics, a fact reflected in the considerable number of small and medium-scale establishments.
- Its output consists mainly of capital goods and it uses specialised, highly labour-intensive processes, reflected in low capital/labour ratios and high wage levels. It is one of the sectors employing the largest proportion of skilled personnel in industrial production.
- Like electronics, it is classified as a mixed oligopolistic market structure.

CHAPTER V

PROFILE OF THE FIRMS

From the answers to questions in our survey, it is possible to describe the main characteristics of the firms in our sample. We shall first present their history, when they were founded, with what legal status and which capital, and how they have evolved over the years. We shall then look at various indicators of their activity and the way they survived the crisis. Finally, we shall analyse in detail the way they operate: to whom do they sell, how do they produce, with what technology, and what is their personnel policy?

5.1 History and present features of the firms

5.1.1 Year of foundation (Table II.5, Annex A)

Just over half of the firms surveyed (52 per cent) were founded in the 1970s, particularly in the period 1970-74, a time, as we have seen, of economic euphoria. Close on one-third of the companies date from the 1960s and only 17 per cent from previous years.

The oldest firms are those in the mechanical goods and electronics sectors, almost 60 per cent of which were established prior to the 1970s, and the average age being eighteen years. Those in the clothing industry, on the other hand, came into existence for the most part in the 1970s and were on average fourteen years old in 1983. This ties in with the previously mentioned fact that the clothing sector experienced a boom from 1970 onwards with the rise of the so-called "fashion industry".

Although there are no reliable parameters for comparative purposes, it may be assumed from the age of the companies that most of them are "successful". Almost 70 per cent of the companies in the mechanical goods and electronics sector and 45 per cent of those in the clothing sector have been in operation for more than ten years and have therefore come through what seems to be the "critical period" for the survival of small businesses, that is to say the first two or three years of existence.(1) All enterprises in the sample have already survived this critical period, the most recent having been established in 1979.

There are only two cases (both in the electronics sector) of companies with a break in the continuity of production; in each case the interruption was for three years and, according to the entrepreneurs, occurred for personal reasons.

5.1.2 Legal status

Almost all the firms (92) are limited liability companies;(2) 5 are owned by individuals and only 3 are public limited companies (Table II.5, Annex A).

The vast majority (86) have maintained their

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1. A study of 81 companies in their first 24 months of existence has shown that only 41 of them survived that period (cf. MAYER, K.B. and GOLDSTEIN, S. - The First Two Years: Problems of Small Firm Growth and Survival. US Small Business Administration, 1961, quoted by ANDERSON, Dale A. - The Growth of Small Business Firms in Brazil, mimeo.
2. A limited liability company can be constituted by two or more persons on the basis of any amount of registered capital. It differs from other types of companies in that it limits the responsibility of partners to the total amount of registered capital when such capital is not fully paid up, and precludes responsibility when the latter occurs.

initial legal status and only 14 have undergone a change. The most common type of change is from individual ownership to a limited liability company; in the electronics industry there are two instances of a change from a public limited to a limited liability company. In most cases, such changes occurred only once, only three companies (in the mechanical goods branch) having changed their legal status twice.

5.1.3 Location

A characteristic commonly attributed to small enterprises is spatial mobility, which may be either a strategy of survival or expansion or be due to external factors (expiry of lease, law on land use, etc.) (Table II.6, Annex A).

Only one-third of the companies are still in their original location; 67 per cent have changed their location, most of them only once. The most stable companies are those in the mechanical goods sector, for which the proportion that have moved drops to 53 per cent.

Of the 67 firms that have moved, 90 per cent claim to have done so on their own initiative with a view to expansion and/or improving their operating conditions; only in the mechanical goods sector is there a larger proportion of companies (19 per cent) that were more or less compelled to move, mainly for reasons connected with the law on land use and expiry of leases.

In almost 80 per cent of cases, the move occurred within the area in which the company is now established and quite frequently (40 per cent of the companies) within the same district. Only 22 per cent of the companies were previously located in a different area; most of the latter belong to the electronics sector, which shows a strong tendency for companies to move from the central region to the south. One entrepreneur in that sector, whose company was established in the 1940s, gives the following explanation for the trend:

"Initially, there was no choice. Banks, offices, all kinds of facilities were in the centre; means of transport were unreliable and so people had to be there." (in the centre).

5.1.4 Premises and physical size

Two-thirds of the companies still occupy rented premises, which to some extent probably facilitates (or contributes to) the phenomenon of spatial displacement; those in the clothing sector, which have the highest proportion of rented premises (75 per cent), also have the highest index of change of location (70 per cent); those in the mechanical goods sector have a higher proportion of company-owned premises (43 per cent) and perhaps on that account tend to move less frequently (53 per cent) (Table II.7, Annex A).

A small group of companies (20 per cent) have changed their ownership status. The tendency is to change from rented to company-owned premises; only four firms (one in the clothing and three in the mechanical goods sector) having moved in the opposite direction. Even without changes in ownership status, it would appear that most companies have changed for the better, since 57 per cent have expanded their premises, with a view, except in three cases, to improving operating conditions.

In terms of built-up area, the smallest premises are found in the clothing sector and the largest in the electronics sector, with little difference between the latter and those in the mechanical goods sector. There is a direct correlation between physical size and other indications of scale such as: "stratum" (Pearson correlation coefficient = 0.59), number of employees (r = 0.61), registered capital (r = 0.45) and turnover (r = 0.61).

5.1.5 Type of establishment

Although a considerable proportion of companies have grown in physical terms, the vast majority (89 per cent) still have only one establishment (Table II.8, Annex A).

Only eleven companies have branches and seven of those companies are in the clothing industry. Each company generally has one branch located in the metropolitan area of the capital city or in Greater São

Paulo; only one firm in the clothing industry has two branches, one located outside the State. Most of the branches (6) are shops that sell the company's products, this being the typical pattern in the clothing industry. Branches that engage in manufacturing activities are more common in the electronics sector; in the mechanical goods sector, only one company has a branch, which engages in both manufacturing and commercial activities.

Few companies (19) have changed their original structure: most of them (11) started out as a single establishment and now have branches; the remainder (8) took the opposite course, closing down branches they had had at the outset.

5.1.6 Registered capital (see Table II.8, Annex A)

Registered capital tells us little about the dynamics of small-scale companies, mainly because few of them take the initiative of periodically adjusting or updating it. In fact, almost all of them have updated their capital on several occasions, but not at fixed intervals. Consequently, in a context of high inflation rates, as in Brazil, recorded values of registered capital rapidly get out of step and can be meaningless.

However, we found that companies' registered capital is positively correlated to their "stratum" (Pearson's coefficient $r = 0.39$), number of employees ($r = 0.44$), physical size ($r = 0.45$) and turnover ($r = 0.59$); it is thus a reasonable indicator of the scale of companies.

The average registered capital, which stands at 20 million cruzeiros, actually varies markedly with the scale of companies: 8.2 million in Stratum 1, 21.9 million in Stratum 2 and 64.8 million in Stratum 3, a trend discernible in the three sectors.

At industry level, the data seem to be consistent with the capital intensity of companies: those in the mechanical goods sector, which demand a greater volume of investment in plant, machines and equipment, show, on average, a higher value of registered capital per employee(1) - 1 339 000 cruzeiros; in the clothing and electronics sectors the corresponding values are 542 000 and 826 000 cruzeiros respectively.

One-half of the companies have already increased their capital on several occasions - usually three or more times. The increase is more frequent among electronics companies, 80 per cent of which have increased their capital at least once and 70 per cent more than twice; in the mechanical goods sector increases in capital are less frequent, occurring in fewer than 23 per cent of companies; in the clothing industry, 47 per cent have increased their capital.

The last of these increases was almost invariably effected, according to the firms surveyed, by means of their own resources; only two companies (in the electronics and mechanical goods sectors) effected their most recent capital increase by taking on a new partner - an individual in the electronics company and a legal entity in the mechanical goods company.

5.2 Economic situation and prospects

5.2.1 The last two years - 1981-82

Most of the companies followed the general economic trend in the last two years, tending to reduce in terms of: sales (45 per cent), production (46 per cent), utilisation of installed capacity (35 per cent), employees (40 per cent) and occasional or temporary staff (35 per cent of companies using this type of manpower). As expected, the downward trend is most pronounced in the

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1. Registered capital per employee was taken as an indicator of the capital intensity of companies, as it was not possible to obtain reliable data from companies on fixed capital. Entrepreneurs and/or accountants interviewed during the pre-test phase warned that their balance sheets were not reliable in that respect and that it would be necessary in each case to evaluate the capital assets of the company.

Table 5.1

Companies: Utilisation of installed capacity and turnover

(in %)

Breakdown		Total	Sector		
			Clothing	Electronics	Mechanical Goods
Level of utilisation of installed capacity in 1982	10-30 %	8.0	7.5	3.3	13.3
	40-50 %	14.0	7.5	16.7	20.0
	60-75 %	30.0	32.5	20.0	36.7
	80-90 %	18.0	17.5	20.0	16.7
	100 %	30.0	35.0	40.0	13.3
	Total (100 %)	100	40	30	30
	Average level	73 %	76 %	79 %	64 %
Turnover in 1982 (in millions of cruzeiros)	Average turnover value (in millions of cruzeiros)				
	General	122	131	142	90
	Stratum 1	34	34	40	29
	Stratum 2	141	126	181	119
	Stratum 3	383	351	381	498
Turnover in 1982 in relation to 1981 *	Identical	27.3	25.6	33.3	23.3
	Greater	47.5	56.5	46.7	36.7
	Less	25.2	17.9	20.0	40.0
	Total (100 %)	99	39	30	30

* In real terms

mechanical goods and electronics sectors (Table II.9, Annex A).

A relatively large group, however, claims to have achieved relative stability during the period in terms of: utilisation of installed capacity (37 per cent), employees (37 per cent), production (26 per cent), sales (25 per cent) and temporary manpower (23 per cent).

A small proportion of companies announced a favourable upward trend in 1981-82 in respect of: occasional manpower (23 per cent), sales and production (19 per cent in each case), utilisation of installed capacity (18 per cent) and persons employed (15 per cent).

The remainder admitted, in proportions varying between 8 and 11 per cent, to a certain amount of instability in respect of all the indicators mentioned, except for the item "temporary manpower", which showed an unstable trend in 19 per cent of companies, all in the clothing industry. In the latter industry the tendency towards instability was more pronounced than in the mechanical goods and electronics sectors, which is not all that surprising, given the nature of its product and its being subject not only to changes in consumer purchasing power but also to the vagaries of the climate: mild winters, for example, are often the cause of bankruptcy in small companies manufacturing woollen garments.

5.2.2 Utilization of installed capacity

With regard to installed capacity, the situation of companies in 1982 was not very different from that of the São Paulo manufacturing industry as a whole: according to the São Paulo Federation of Industries(1), manufacturing used 76 per cent of its installed capacity in that year, whereas the average for the small firms in our survey came to 73 per cent. According to the same source, the indices for the mechanical and electro-electronic equipment industries were 69 and 71 per cent respectively. In the companies included in our sample the corresponding indices were 64 and 79 per cent; thus, in comparison with their

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1. Circular no. 88 of 19.9.83

respective industries, the performance of small firms in the mechanical goods sector was below average and above average in the electronics sector.

Almost half of the companies in our sample (48 per cent) operated at levels higher than 80 per cent, i.e. above the general average, in 1982; close on one-third (30 per cent) utilised their capacity to the full during the period. The mechanical goods companies performed poorly compared with the others; only 30 per cent recorded a rate of utilisation of productive capacity higher than the average for industry, and only 13 per cent maintained full capacity (100 per cent).

The relatively high levels of utilisation of productive capacity in the firms surveyed are not at all surprising, since small-scale companies are organised to operate at a specific level of production, and do not leave idle capacity for future expansion, as do large corporations.(1) Small firms are usually flexible when it comes to expanding or reducing their activities, since they find it easier to move to larger or smaller premises, to purchase or sell machinery, to take on or dispense with external services, etc.

5.2.3 Turnover

Although almost one-half of the companies reported a decline in sales in 1981-82, just under 47 per cent stated that their turnover in 1982 was greater than in 1981 in real terms (allowing for an inflation rate of 100 per cent); 27 per cent stated that their turnover remained unchanged in the two years and 25 per cent that it had declined (Table 5.2).

The companies' average turnover in 1982 came to 122 million cruzeiros, a figure which in September 1983, when the research was conducted, would have to be increased by at least 85 per cent (taking into account the monetary adjustment indices for the period January to

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1. GONCALVES, Carlos E. do Nascimento. 1976 A pequena e media empresa na estrutura industrial brasileira; 1949-79. Op. cit.

September 1983).

In a situation of three-digit inflation, numerical values are of little significance;(1) however, the correlation coefficients between turnover and other indicators of the scale of companies, i.e.: "stratum" (0.75), number of employees (0.82), physical size (0.60) and registered capital (0.59) are significant. This indicates that the data obtained are at least consistent, in contradiction to the current argument that it is virtually impossible to obtain reliable data on the financial performance of small businesses.

5.2.4 Prospects for 1983-84

It is very difficult to make forecasts in Brazil. In September 1983, however, it seemed reasonable to ask companies at least about the outlook for the remaining months of the year and the following year.

Surprisingly enough, a good many of them were relatively optimistic about the future, since in spite of the strongly recessional context they expected to remain stable in terms of the number of employees (47 per cent), production (37 per cent), sales (36 per cent) and temporary manpower (42 per cent of the 31 companies using it) (Table II.10, Annex A). The "optimistic" group expected growth during the coming period in production (25 per cent), sales (24 per cent), number of employees (17 per cent) and temporary manpower (20 per cent); predictably, the firms in the mechanical goods industry were less optimistic for all the above items.

The "pessimistic" group, which we expected to be larger, represented between 25 and 30 per cent of the total for the various indicators considered. The remainder expected the period to be unstable or did not know what to expect; these two groups ("unstable" and "don't know") accounted for only a small proportion of the total, but they were more significant in the mechanical goods industry, for which the margin of uncertainty

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1. The official figure for inflation in 1983 was 211 per cent.

Table 5.2

Enterprises: Products and activities

(in %)

Breakdown		Total	Sector		
			Clothing	Electronics	Mechanical Goods
Number of products/ activities	1	38.8	30.0	44.8	43.4
	2	29.3	20.0	27.7	43.4
	3	10.1	15.0	6.9	6.6
	4	6.1	10.0	6.9	-
	5	6.1	10.0	3.4	3.3
	6 or more	10.1	15.0	10.3	3.3
	Total (100 %)	100	40	30	30
Number of products/activities accounting for 50% of the turnover	1	81.3	81.1	79.3	83.4
	2	12.5	10.8	13.8	13.3
	3-4	6.2	8.1	6.9	3.3
	Total (100 %)	97	37	30	30
Principal product/ activity	Finished products for final consumption	60.0	90.0	70.0	10.0
	Components for other industries	22.0	-	23.4	50.0
	Manufacturing, assembly or finishing services	15.0	7.5	3.3	36.7
	Some or all of the types mentioned	3.0	2.5	3.3	3.3
	Total (100 %)	100	40	30	30
Principal product - category of use	Non-durable consumer goods	37.0	92.5	-	-
	Consumer durables	11.0	-	36.7	-
	Capital goods	37.0	-	60.0	63.3
	Non applicable (provision of services)	15.0	7.5	3.3	36.7
	Total (100 %)	100	40	30	30
Changes in product/ activity lines	No change	68.0	77.5	50.0	73.4
	Partial change	18.0	17.5	23.3	13.3
	Total change	14.0	5.0	26.7	13.3
	Total (100 %)	100	40	30	30
Main motive for changes	Costs	22.0	44.5	-	37.5
	Market	28.1	22.2	20.0	50.0
	Technology	18.7	-	33.3	12.5
	Costs, market, technology	15.6	11.1	26.7	-
	Others	15.6	22.2	20.0	-
	Total (100 %)	32	9	15	8

regarding the near future therefore seems greater.

A greater degree of pessimism had been expected on the part of interviewees, given the tone of statements by trade unions and the data published by official sources on the performance of the economy in 1983 and the outlook for 1984. In August 1983, for example, ABIMAQ (Brazilian Association of the Machinery and Equipment Industry, which includes the mechanical goods sector) transmitted a document to the public authorities reporting a decline of 33 per cent in the level of activity in the industry since the beginning of the year, a real loss of 20 per cent in turnover for the same period and a drop of 16 per cent in the level of employment. A similar feeling is expressed in the statements of ABINEE (Brazilian Association of the Electric and Electronics Industry), which describes 1983 as "the very worst year since the electro-electronics industry came of age (...), with a decline of 14 per cent in production compared with 1982 and 54 000 employees laid off".(1)

Against this background, how are we to account for the relatively optimistic expectations of a large number of interviewees or for the fairly satisfactory performance of their companies over the past two years (1981-83)? As we have seen, almost 60 per cent expected if not an increase at least a stable performance up to the end of 1984; close on half of all companies claimed to have achieved that objective (growth or stability) in 1981 and 1982.

The possible explanation is linked with the place such companies occupy in the market: inasmuch as they cater for strictly limited (indeed to some extent marginal) markets, smaller firms are relatively sheltered from competition and are less severely affected by the crisis:

"... the unusual fact is that, taking the economy as a whole, the smaller firms are not necessarily those first eliminated by the process of concentration; the reason is that they form part of small industrial centres

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1. Industrial Yearbook 1984

(...) sheltered from competition with other industries (...)."(1)

5.3 What the companies do

5.3.1 Products and activities

Almost 70 per cent of the companies tend to specialise in one or two products or activities. As expected, those in the clothing industry are more diversified, one-half of the firms in our sample branching out into three or more products/activities. Those in the mechanical goods are more specialised, 86 per cent depending on a maximum of two products or activities.

Measured in terms of turnover, however, the degree of specialisation is high in all sectors: in almost 80 per cent of companies one-half of the turnover relates to just one product/activity.

In most companies (68 per cent), the current product or line of activity has remained unchanged since the company was founded; 18 per cent have introduced partial changes and 14 per cent have departed completely from their initial activities. Those in the electronics sector have changed the most: 23 per cent have introduced partial changes and 27 per cent have switched completely from their original product/activity lines.

The changes were due chiefly to:

- the market (28 per cent), that is to say changes in consumers' preferences;
- the need to lower or eliminate high costs (22 per cent);
- technological changes or advances (19 per cent); or
- a combination of the three factors - market, costs and technology.

The factors leading to changes in product/activity vary in importance from sector to sector: in the clothing sector the main factor is costs, in the electronics sector

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1. STEINDL, J. Small and Big Business, quoted by GONCALVES, 1976, Op. cit.

technology and in the mechanical goods sector the market.

The main products/activities of firms in each industry are discussed below.

(a) Clothing

The companies we have surveyed in this industry produce clothes, which are obviously non-durable consumer goods, ready for final consumption and in most cases catering for low income groups. Only one firm aims at a more sophisticated market (luxury boutiques) and only five aim at the "middle classes" - from the standpoint of the materials used, the quality of service provided and the price of the final product. Only three companies, all of them in the less than 20 employees, Stratum 2, do not have their own production lines, and concentrate exclusively on the provision of sewing and/or finishing services for medium-size companies.(1) The number of such businesses was in fact, fewer than we expected, perhaps because of the small size of the sample and the relatively wide range covered - between 5 and 99 employees; sub-contracting service companies are apparently more common in the 0 to

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1. One of these was visited during the research project: the firm makes popular-style trousers and shirts, was founded in 1953 and is still theoretically in the small-scale category, since it has a staff of only 75 employees; only five of these are in the "production" department and their activities are confined to designing/cutting and subsequently quality control of the finished product. The sewing and finishing operations are done outside the company by a dozen or so small firms employing no more than 20 persons each. The firm's remaining 70 employees work in the three shops through which the product is distributed. This operational model began to be introduced in the 1960s as a way of reducing costs and maximising profits - and it seems to have served its purpose, since according to its owners the company "doesn't know what crisis means".

20 employees group.

As well as concentrating on one or a few products, small firms in the clothing industry also tend to focus on a particular group of customers, specialising, for example, in men's, women's or children's clothing, or "unisex". This specialisation is due to the design, materials and actual machinery needed for the different lines of clothing.

(b) Electronics

A large proportion of the companies in this sector (23 per cent) produce parts or components for other firms in the industry (e.g. coils, valves, capacitors, resistors, printed circuits, etc.). Most of them (70 per cent), however, have one line of finished products for consumption.

In keeping with the industry's general characteristics, the firms in the sample have two quite distinct lines of specialisation in terms of category of utilisation of the products: capital goods (60 per cent of the sample) and consumer durables (37 per cent). Only one company did not engage in manufacturing, merely providing services for other companies. The capital goods produced are mainly telecommunication equipment (towers, transmitters, adapters, etc.). The consumer durables consist of radio and television equipment, catering exclusively to popular taste, since otherwise these companies could hardly survive in an industry so heavily controlled by the multinationals. The "success" of such popular lines is assured, according to entrepreneurs, in peripheral markets such as those in small municipalities of the metropolitan area and the interior of the State, or in the least developed regions of the country.

(c) Mechanical goods

The firms in this industry are different from those in the others: half of them are principally engaged in the manufacturing of parts/components for other industries, 37 per cent are exclusively providers of services and only 10 per cent manufacture finished goods. The firms that manufacture products (63 per cent) are all in the capital goods sector; the remainder, service companies (37 per cent), operate mainly in the fields of machining down and tooling, cold stamping and soldering.

5.3.2 Customers (Table 5.3)

Taken as a whole, most of the companies (55 per cent) deal mainly with commercial and service units that resell or distribute their products; 38 per cent sell their products to the industrial sector itself; the remainder cater for other consumers (4 per cent) or the public sector and individuals, or have a diversified clientele (3 per cent).

In the majority of cases, the main customer is a small or a medium-size unit (54 per cent of firms) but 39 per cent depend on large-scale national, foreign or multinational companies.

Over one-half of the companies (56 per cent) deal exclusively with one type of customer. Among the 44 which have "secondary" customers, relations with the tertiary sector also predominate (45 per cent); 39 per cent cater for the industrial sector and 16 per cent for the public sector and individuals. Those customers are, in most cases (55 per cent), small and medium-size units, both commercial and industrial; some firms (29 per cent) have connections with large-scale companies and the remainder deal with other types of customer.

This overall picture, however, does not reflect the variation which exists among sectors as a result of their different product/activity lines. As we shall see below, each sector has some specific features.

(a) Clothing

A vast majority of the companies in this industry (80 per cent) are heavily dependent on commercial enterprises - shops, boutiques, department stores, supermarkets - that distribute their product to the final consumers; only three firms (providing sewing and finishing services) operate primarily for other industrial firms and another three depend directly on final consumers/individuals; two firms have no principal client and work with various types of customer.

Table 5.3

Companies: Customers and sales system

(in %)

	Breakdown	Total	Sector		
			Clothing	Electronics	Mechanical Goods
Principal client	SMEs - Trade/services	36.0	$\boxed{57.5}$	20.0	23.3
	SMEs - Industry	18.0	5.0	$\boxed{23.3}$	$\boxed{30.0}$
	Large companies - trade/services	19.0	$\boxed{22.5}$	$\boxed{33.4}$	-
	Large companies - industry	20.0	2.5	20.0	$\boxed{43.4}$
	Others (government, individuals)	4.0	7.5	3.3	-
	Diversified clientele	3.0	5.0	-	3.3
	Total (100 %)	100	40	30	30
Secondary client	SMEs - Trade/services	29.5	$\boxed{53.3}$	$\boxed{45.4}$	-
	SMEs - Industry	25.0	-	18.2	$\boxed{50.0}$
	Large companies - trade/services	15.9	20.0	18.2	11.1
	Large companies - industry	13.7	6.7	9.1	22.2
	Others (government, individuals)	15.9	20.0	9.1	16.7
	Total (100 %)	44	15	11	18
Production to order/sub-contracting	None	12.0	17.5	10.0	6.7
	All productive activity	$\boxed{44.0}$	$\boxed{30.0}$	$\boxed{40.0}$	$\boxed{66.7}$
	Bulk of productive activity	23.0	27.5	26.7	13.3
	One-half or less of productive activity	21.0	25.0	23.3	13.3
	Total (100 %)	100	40	30	30
Sales system	Retail - wholly or mainly	6.0	2.5	10.0	6.7
	Retail/wholesale - equal shares	5.0	7.5	3.3	3.3
	Mostly wholesale	20.0	32.5	10.0	13.3
	Entirely wholesale	$\boxed{69.0}$	$\boxed{57.5}$	$\boxed{76.7}$	$\boxed{76.7}$
	Total (100 %)	100	40	30	30
Payment conditions	On sight - wholly or mainly	12.1	23.0	6.7	3.3
	On sight/on credit - equal shares	6.1	5.1	3.3	10.0
	Mainly on credit	33.3	11.1	23.3	33.0
	Entirely on credit	48.5	30.8	66.7	53.4
	Total (100 %)	99	39	30	30

SMEs = Small and medium-size enterprises

Relations with small and medium-size establishments (shops) predominate (63 per cent of companies), a pattern that is relatively consistent with the popular nature of the articles produced, intended mainly for low-income consumers; only 25 per cent of firms depend primarily on large units (chains of shops, department stores, supermarkets), while the remainder (12 per cent) do not work for companies or have a diversified clientele.

Close on two-thirds of the clothing companies survive by catering for a single type of client; only 15 cater, in addition to their "principal" client, for another customer, referred to in this context as "secondary". The characteristics of the latter clientele are virtually the same: eleven firms have relations with commercial establishments, mostly in the small and medium-size category; three deal with individuals and only one works for another large-scale industry.

(b) Electronics

The principal customers of the electronics companies fall into two categories:

- Commercial shops: 53 per cent of the companies work for the commercial and services sector, which includes stores and shops that resell household electrical appliances or electro-electronic materials, as well as repair and technical assistance centres; most of the first in this group (33 per cent) deal with large-scale establishments;
- Industrial firms: 43 per cent depend on the industrial sector and in this case small and medium-size customers are almost as important as large-scale clients - including in particular foreign and multinational companies.

The primary customers of small electronics firms are therefore either large companies (53 per cent of the firms interviewed) in the secondary and tertiary sectors; or, but to a lesser extent, small and medium-size units (43 per cent). Only one company deals principally with the public sector.

Only 11 electronics companies mentioned the existence of secondary customers. Here too, relations with the tertiary sector - shops, retailers, offices - predominate (7 firms); only three cater for other industries and one deals with the government.

(c) Mechanical goods

Connections with other industrial firms predominate in this group, particularly with companies producing metal products and machinery: 73 per cent of the firms we surveyed depend primarily on such customers, while only 23 per cent deal principally with commercial units such as shops specialising in hardware, parts and tools, department stores and supermarkets; there is only one case of diversified clientele.

Over one-half of the firms (53 per cent) depend basically on small and medium-size units; 43 per cent deal mainly with large-scale enterprises, all in the same industry and most of them foreign or multinational.

In contrast to the other sectors, most mechanical goods companies (60 per cent) also have secondary customers, falling into much the same category as their primary clientele. They are in most cases (13 firms) industrial enterprises, mainly in the small to medium-size range; only two companies have connections with large trading units and three deal with individuals.

5.3.3 Sales system

As might be expected, most of the firms in our sample (67 per cent) work predominantly or exclusively on orders, or they subcontract. Another 21 per cent depend on orders or subcontracts for less than half of their total production; only 12 per cent produce on a totally independent basis. This system of operation has remained unchanged in 87 per cent of companies since their foundation; only 13 per cent have changed, generally from independent production to a system based on orders or subcontracts.

Consistent with that system and with their type of clientele, a majority of firms (89 per cent) operate mainly or exclusively on a wholesale basis. Only 6 companies sell solely or mainly on a retail basis and most of them are found in the electronics sector (3 firms), not in the clothing industry as might be expected. Looking at the matter from another angle, however, the assumption that retail selling would take place primarily in the clothing industry is confirmed: 43 per cent of firms in the sector sell to a greater or lesser extent directly to individuals compared with only 23 per cent of firms in the electronics and mechanical goods sectors. However, even in the clothing industry individual consumers do not figure significantly among the customers on whom companies depend for their survival.

In line with the predominant sales system, over 80 per cent of companies permit payment on credit, solely or predominantly, with durations ranging from 30 to 270 days, that of 60 days being the most frequent.

5.3.4 Markets

The vast majority of companies confine themselves to the Brazilian market. Only 12 export their products, and of those only three on a regular basis. There is however, a significant group of "former exporters" (firms that used to export but no longer do so): 14 per cent of all firms and 23 per cent of electronic firms. In general, export activities were halted on account of both lack of interest on the part of foreign customers and difficulties inherent in the exporting process (Table II.11, Annex A).

Most of the 12 "exporting" companies (seven firms) are in the electronics sector. The less developed countries of Latin America serve as the principal market for almost all of them (10); one electronics company sells to African countries and another mechanical goods company to western Europe. Only 6 companies (5 in the electronics and 1 in the clothing industry) take advantage of tax incentives for exports. In all cases, exports represent only a small proportion of total sales.

The State of São Paulo is the exclusive or major field of activity of almost two-thirds of the companies. In the mechanical goods sector, only two firms sell 50 per cent or more of their production outside the State. In clothing and electronics, on the other hand, the proportion is quite sizable (just under 35 per cent), and indeed one electronics company sells all its products outside São Paulo.

This difference between sectors is closely associated with the type of product/activity in which a company specialises:

- firms producing capital goods - both electronic and mechanical - or providing services for other companies operate predominantly or exclusively within the State of São Paulo, where the demand for such goods and services is concentrated;
- those producing durable (electronics) or non-durable (clothing) consumer goods for low-income groups tend to sell more outside the State, generally in peripheral markets where the competition is weaker and/or consumers are less demanding.

To a greater or lesser extent, however, almost 80 per cent of the companies do business in other States or regions. A good many of these - 32 per cent of the total and 55 per cent in the mechanical goods sector - have established a national network, selling to several or all the regions of the country. The principal market, however, (mentioned by 36 per cent of companies, chiefly in the clothing industry) is in the southern region, embracing Parana, Santa Catarina and Rio Grande do Sul. It is followed by the south-eastern region (18 per cent) (Minas Gerais; Rio de Janeiro and Espírito Santo) and the north/northeast (14 per cent), which is mentioned by 25 per cent of the electronics companies.

5.3.5 Competition

Only five companies - three in clothing and two in electronics - claim to be in the privileged position of having no competitors, which seems true in the electronics sector given the type of product manufactured, but less likely in the case of clothing, since the articles produced are certainly not the only ones of their kind on the market.

All the others admit to having a greater or lesser degree of competition to contend with. A large proportion

(48 per cent) of firms describe the competition in the sector as "keen", representing a permanent threat to the survival of the company; in mechanical goods, 60 per cent of the firms claim to be in this situation. One-third of the companies describe the competition as "moderate", requiring attention but not posing a threat to their survival. According to the remainder, competition is "weak", having little impact on the company and giving little cause for management concern.

Almost 60 per cent of companies face their main competitors on relatively equal terms, since the latter tend to be small or medium-size enterprises - indeed in most cases small (48 per cent). Large-scale enterprises (Brazilian, foreign or multinational) are the main competitors for only 23 per cent of companies. As expected, this type of competition (from large, mainly foreign and transnational corporations) is greater in electronics, being mentioned by 43 per cent of the firms in that sector.

The remainder of the interviewees refer to the problem of clandestine "backyard" manufacturers (10 per cent) or state that they have more than one type of competitor (7 per cent).

Less than one-third of the group (31 firms) mention the existence of secondary competitors in addition to the "principal" one. In such cases the following types predominate:

- small firms (45 per cent), mentioned chiefly in the mechanical goods sector;
- clandestine manufacturers (29 per cent), more common in the clothing industry; and
- large companies (Brazilian, foreign and multinational) (26 per cent), mentioned in all three sectors.

Analysing all references to both "principal" and "secondary" competitors, it may be concluded, from the standpoint of interviewees, that the major threat to the survival of small companies comes, in descending order of importance, from:

- similar small and medium-size companies in all industries;

Table 5.4

Companies: Competition

(In %)

	Breakdown	Total	Sector		
			Clothing	Electronics	Mechanical Goods
Degree of competition	No competitors	5.0	7.5	6.7	-
	Weak competition	14.0	12.5	16.7	13.3
	Moderate competition	33.0	35.0	36.6	26.7
	Strong competition	48.0	45.0	40.0	60.0
	Total (100 %)	100	40	30	30
Main competitor	Clandestine manufacturers	9.5	16.3	-	10.0
	Small-scale enterprises	47.4	51.3	39.2	50.0
	Medium-scale enterprises	12.6	8.1	14.3	16.6
	Large-scale enterprises:				
	- Brazilian	12.6	13.5	14.3	10.0
	- Multinational, foreign	10.5	-	28.6	6.7
	Various kinds	7.4	10.8	3.6	6.7
	Total (100 %)	95	37	28	30
Secondary competitor	Clandestine manufacturers	29.0	41.7	33.3	10.0
	Small-scale enterprises	45.2	33.3	44.5	60.0
	Large-scale enterprises: Brazilian, multinational, foreign	25.8	25.0	22.2	30.0
	Total (100 %)	31	12	9	10
Strategies used to cope with competition	Publicity	7.3	8.1	7.1	6.7
	Low prices	28.4	24.3	42.8	20.0
	Payment facilities	11.6	16.2	7.1	10.0
	Quality of product	68.4	64.9	75.0	66.7
	Product updating/modification	21.0	35.1	21.4	3.3
	Sophistication/exclusiveness of product	12.6	13.5	21.4	3.3
	Launching of new products	12.6	13.5	17.8	6.7
	Speediness, promptness of service	34.7	24.3	21.4	60.0
	Others	6.3	-	7.1	13.3
	Total (100 %) •	95	37	28	30

• The percentages do not add up to 100 %, since each item or "strategy" may be mentioned by all interviewees.

- large Brazilian, foreign or multinational companies, especially in electronics;
- clandestine manufacturers, especially in clothing.

What are the main "tricks" or strategies used by companies in order to compete and survive in the market? Most of them (68 per cent) believe it is the quality of their product, a claim made in all three sectors; 35 per cent (mainly in mechanical goods) mention rapidity or promptness in meeting customers' needs and 28 per cent (chiefly in electronics) state that their prices are low.(1)

Other strategies mentioned relate mainly to the products themselves:

- constant updating or renewal of models (21 per cent), particularly in the clothing industry, as might be expected;
- sophistication or exclusiveness;
- launching of new items.

Lastly, mention was made in some cases of the payment facilities offered to clients (12 per cent), publicity (7 per cent) and other factors such as stock accumulation and the system used to distribute the product.

Although all these factors contribute to the companies' "success", it would appear that the opinions of interviewees reflect a natural tendency to overrate their own work. "Product quality", for example, is not the forte of most of the firms visited. On the contrary, their products are saleable precisely because of their lack of sophistication, serving markets with low purchasing power and hence less demanding.

The key to the survival of the companies would therefore seem to be the discovery and correct exploitation of a market segment in which they can compete on equal terms and are, up to a point, protected against potentially more dangerous competitors such as large

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1. The percentages do not add up to 100 per cent, as each respondent could mention more than one item or "strategy".

companies. For example, one entrepreneur, a manufacturer of black-and-white television sets, said that he had no interest in improving his product or making it more sophisticated (assembling colour television sets for example), not so much because of technological considerations but mainly because if he did so he would be laying himself open to a dual threat: losing his market, which would be unable to absorb a more expensive product, and at the same time attracting the attention of the multinationals, which are at present virtually unaware of his existence.

Mention should also be made of the operational flexibility of the firms, revealed by various indicators which we will show later on, such as:

- small scale of production;
- absence of rigidly defined roles or duties for the work-force;
- large-scale utilisation of external labour (clothing industry).

This flexibility enables companies to expand - without joining the large-scale category - or contract, depending on the economic situation, by taking advantage of relatively transitory conditions. One entrepreneur in the mechanical goods sector, for example, who now has 15 employees, had almost 100 in 1981 during the roller-skate "boom" (his company was manufacturing wheels for the skates), which also enabled him to move to company-owned premises.

5.4 Technology and organisation

5.4.1 Original products and updating (Table 5.5)

(a) Origins

The original projects for current product lines were derived from two main sources:

- in most cases (62 per cent), they are mere copies or adaptations of articles already existing on the Brazilian market (the typical procedure in clothing) or abroad (more common in electronics), which does not involve buying any manufacturing licence or paying any rights. In clothing, there are only three companies that have acquired rights to use foreign models;

- in other cases (29 per cent), they are provided by the customers themselves; this is the predominant tendency in the mechanical goods sector, being mentioned by 73 per cent of all companies.

Very few companies (three) launched or developed their own projects; in six cases, several of the sources mentioned above were combined.

In 71 companies, therefore there was a certain amount of project design or adaptation, which was almost exclusively (in 90 per cent of companies) undertaken by the owner himself or one of the partners. In most cases (67 per cent), the partner still belongs to the company, with the exception of the mechanical goods sector, in which previous partners played a greater role in the creation/adaptation of the projects. This may be put down to the fact that there are many long-established firms in this sector. Only eight companies however, in the mechanical goods sector developed or adapted their projects; the remainder (22) started with projects provided by their customers.

There are very few cases (three) in which an employee - technician or engineer - was responsible for developing the original projects; similarly, it is rare (four companies) to find such work being undertaken outside the firm by a contracted or associate company.

(b) Updating

As we have seen, most companies have never changed their product line. As far as projects are concerned, however, 76 per cent of firms state that they have updated or modified them, as and when necessary (22 per cent) or more or less regularly (54 per cent). Predictably, firms in the clothing industry, which depend on fashion, are more inclined to update their projects periodically (75 per cent); the mechanical goods sector, on the other hand, has the largest proportion (57 per cent) of companies that have never made any change in their

Table 5.5

Companies: Projects - origin, updating/modification

(In %)

	Breakdown	Total	Sector		
			Clothing	Electronics	Mechanical Goods
Origin of product(s)	Provided by client company	29.0	10.0	10.0	73.3
	Developed in the company itself	3.0	2.5	6.7	-
	Adapted from products existing abroad	17.0	2.5	40.0	13.3
	Adapted from products on the domestic market	45.0	80.0	36.6	6.7
	Several of the above	6.0	5.0	6.7	6.7
	Total (100 %)	100	40	30	30
Person responsible for developing/ adapting the original project	Former owner/partner	22.5	11.1	29.6	50.0
	Present owner/partner	67.7	77.8	66.7	25.0
	Employee - technician/engineer	4.2	8.3	-	-
	Other (outside the company)	5.6	2.8	3.7	25.0
	Total (100 %)	71	36	27	8
Modification/ updating of projects	Never undertaken	24.0	12.5	6.7	56.7
	Sometimes, sporadically	22.0	12.5	30.0	26.7
	Always, regularly	54.0	75.0	63.3	16.6
	Total (100 %)	100	40	30	30
Motives for updating/ modification	Costs	6.6	5.7	3.6	15.4
	New market trends	55.2	71.4	42.9	38.4
	Customer demand	17.1	14.3	17.8	23.1
	Technology change	4.0	-	10.7	-
	Several/all of the above	17.1	8.6	25.0	23.1
	Total (100 %)	76	35	28	13
Person responsible for updating/ modification of projects	Owner or partner	75.0	85.8	68.0	61.5
	Employee	10.5	8.6	14.2	7.7
	Other - outside the company (client or contracted company, self-employed individuals)	14.5	5.6	17.8	30.8
	Total (100 %)	76	35	28	13

original projects.

Most companies (72 per cent) change or update their projects according to the market situation: either to keep abreast of emerging trends (55 per cent) or to meet customers' demands (17 per cent). Costs or technological changes are also mentioned, but are not very important on the whole; almost 17 per cent of firms, however, attribute project changes to a combination of all these factors: market/customers, costs and technology.

According to 75 per cent of the enterprises, it is again one of the partners who is mainly responsible for project renewal and modification. The remainder mention in this respect:

- employees (technicians or engineers) - 10 per cent, chiefly in electronics;
- agents from outside the company (15 per cent), for example a client or contracted companies or independent professionals, this being more frequently the case in electronics (18 per cent) and in the mechanical goods sector (31 per cent).

5.4.2 Production: planning and organisation (Table II.12, Annex A)

(a) Planning

As most of the companies work to order, it is not surprising that a good many of them (50 per cent) plan their production on the basis of customer demand. This system prevails in 70 per cent of firms in the mechanical goods sector, owing to the predominance of activities relating to the provision of services.

In the remainder, planning depends on customer demand and the trend of sales (30 per cent) or on sales alone (14 per cent); only six firms report an independent system of production planning.

In almost all cases (98 per cent), planning is on a very short-term basis (one to two months); only two companies, in the electronics and mechanical goods sector, plan ahead for somewhat longer periods. Coincidentally, these are also the only companies that use more sophisticated planning tools (computers for example); the electronics firm has its own micro-computer and the mechanical goods company uses the services of third parties.

(b) Organisation

Over half of the firms (52 per cent) produce on a limited scale, i.e. exclusively in small batches; 13 per cent engage in large-batch production, 12 per cent work by the piece and 23 per cent combine all the approaches mentioned.

Only two forms of production occur in the clothing industry: production in small batches (70 per cent) or in "large" batches (23 per cent). In electronics, small-batch production also predominates (60 per cent), followed, however, by the mixed model (27 per cent), including in this case both small and large-batch production. In the mechanical firms mixed production prevails (47 per cent), combining unit-custom-made production and small-batch production; a further large group (33 per cent) operates exclusively "by the piece/project".

Only a few companies have changed their system of production since their establishment: a total of 14 firms, six in clothing, five in electronics and three in mechanical goods. There is no single pattern of change, cases of transition from "large" to small-batch being about as frequent as the change from small to "large-batch" or the adoption of mixed systems.

In the vast majority of companies (81 per cent) the work force operates on a production or assembly line, this system being fixed or permanent in a large proportion of cases (52 per cent); in 29 per cent of firms the production line is flexible or temporary, organised to meet product manufacturing needs; in the remainder, 19 per cent, there is no production/assembly line.

All the electronics companies, mostly specialising in assembly, operate production lines and the latter are permanent in 73 per cent of cases. Fixed production lines also predominate in the clothing industry (50 per cent of firms); 30 per cent of the other half operate flexible lines and 20 per cent do not operate production lines. A different pattern is found in the mechanical goods sector, in keeping with the high frequency of service activities and the unit-custom-made production system: in 37 per cent no production line exists; 30 per cent operate production lines on a flexible basis and only one-third have permanent production lines.

It is important to note, however, that production or assembly lines in small companies by no means correspond to the models found in large-scale companies. It is basically a system in which each worker or group of workers concentrates on executing one part of the final product, without, however, being subject to the speed and standardisation of movement imposed by the conveyor belt system in large-scale industry.

5.4.3 Manufacturing process (Table 5.6)

A total of 82 per cent of the companies use electro-mechanical processes with manual control, 14 per cent rely on manual labour and 4 per cent operate with both types indiscriminately. Electro-mechanical processes with electronic control do not predominate in any company, although some possess equipment of this type.

In the clothing and mechanical goods sectors, the manufacturing process is almost always predominantly mechanised (or electro-mechanical). In electronics, however, a considerable proportion of companies (40 per cent) (especially those producing consumer durables) mainly use manual processes, which is consistent with the low level of sophistication of their products. One entrepreneur in the sector, a manufacturer of radio and television sets, explained that the assembly process required only manual spot-welding equipment and calibrating instruments, since the chassis and components were manufactured elsewhere.

Only eight companies in all have changed their original manufacturing process: one in clothing, four in electronics and three in the mechanical goods sector. The changes occurred in various directions, from manual to electro-mechanical, vice versa, or adoption of a mixed system.

Relatively few companies (22 per cent) manufacture

Table 5.6

Companies: Manufacturing process

(in %)

	Breakdown	Total	Sector		
			Clothing	Electronics	Mechanical Goods
Predominant manufacturing process	Manual	14.0	2.5	40.0	3.3
	Electromechanical - manual control	82.0	97.5	53.3	90.0
	Mixed	4.0	-	6.7	6.7
	Total (100 %)	100	40	30	30
Manufacturing of product(s)	Carried out from start to finish by the company	22.0	15.0	40.0	13.3
	Mostly carried out by the company	57.0	50.0	36.7	86.7
	One-half or major portion carried out elsewhere	21.0	35.0	23.3	-
	Total (100 %)	100	40	30	30
Main manufacturers of parts of the product	Homeworkers	33.3	73.5	5.6	-
	SMEs	55.2	20.6	77.8	84.6
	Large-scale enterprises	7.6	-	11.0	15.4
	Various	3.9	5.9	5.6	-
	Total (100 %)	78	34	18	26
Changes in the system of execution	Never changed	78.0	67.5	80.0	90.0
	Changed	22.0	32.5	20.0	10.0
	Total (100 %)	100	40	30	30

their entire product or activity from start to finish; 57 per cent execute the major part of the process and 21 per cent less than half.

In clothing, only six companies (15 per cent) manufacture their product from start to finish. The remainder have some part of the process done elsewhere, chiefly the sewing process and specialised services such as laundering, dyeing and printing (silk-screen, embroidery). There are also cases in which the design and cutting are done outside the company. As might be expected, such services are provided mainly by homeworkers and casual workers (73 per cent) or small and medium-size enterprises (21 per cent).

The greatest proportion of firms (40 per cent) manufacturing their entire product from start to finish are found in the electronics sector. The other 60 per cent in this sector depend to a greater or lesser degree on external agents, especially for casting and tooling (casting of chassis, stamping, metal-cutting) and for electroplating or treating surfaces, for example gilding, chromium-plating and coating with zinc. The agents are for the most part (78 per cent) small and medium-size enterprises; homework, which is common among large-scale firms in the industry, is used by only one of the firms in our sample.

The mechanical goods firms, a good number of which specialise in machining down and tooling, either manufacture their products from start to finish (13 per cent) or carry out most of the process (87 per cent). Among the latter, the stages usually carried out elsewhere are those of thermal treatment, galvanoplastics, metal milling, casting and boilermaking, in most cases (85 per cent) by other small and medium-size companies.

Although a good many partners also have an interest in other companies (see Chapter 6), there are only three cases - two in electronics and one in the mechanical goods sector - in which part of the manufacturing process is carried out by another firm in which the partners participate.

To sum up, in the mechanical goods and electronics sector the companies have part of their manufacturing process done externally in two areas: the preparation of inputs and/or finishing of the product. There is every indication that this is a traditional procedure in the sectors concerned, since 80 per cent of the electronics firms and 90 per cent of those in the mechanical goods sector have been operating such a system since their establishment.

In clothing, however, it is the production itself that is in the hands of outside companies. This is a growing trend in the sector, at least one-third of the sample having changed their production system, using more and more contractors and homeworkers and thus eliminating or ceasing to expand some parts of the firm.

This is undoubtedly an important survival strategy on the part of the companies, since it enables them to reduce labour costs and cope with the typical seasonal nature of business, expanding and contracting in accordance with market trends.

5.4.4 Machinery (Table II.13, Annex A)

Machinery and equipment are obviously items more or less specific to each sector.

In clothing, the machinery consists basically of cutting and various kinds of sewing and finishing machines (overlocking, interlocking, buttonholing, button-sewing) as well as looms in companies producing woven goods. In 90 per cent of the companies, this equipment is exclusively or predominantly foreign-made, which perhaps accounts for the greater frequency in the sector of firms with operating and maintenance problems - 53 per cent, compared with only 13 per cent in electronics and 20 per cent in the mechanical goods sectors.

No company in any sector, however, has imported its foreign equipment directly from abroad; it is always purchased on the domestic market from resellers or specialised representatives.

In the electronics and mechanical goods sectors, almost 80 per cent of the firms operate exclusively or predominantly with Brazilian machinery and equipment. In electronics, the most common equipment is spot welding and calibrating instruments (voltmeters, densimeters, oscilloscopes); there are few cases of companies with heavy equipment such as lathes, and machines for milling and boring. In the mechanical goods sector, on the other hand, this is the predominant type of equipment. As already noted, most of the firms in these two sectors state that they have no problems with machinery.

In almost all the companies (90 per cent), the original machinery has been changed, and most or all of it in over 70 per cent of companies.

In over 80 per cent of cases, the change consisted in expanding the original equipment, replacing old machinery and/or adding new, more modern machines. Twelve per cent of the firms confined themselves to replacement of old machinery and the remaining 6 per cent reduced their equipment.

In spite of this tendency to renew machinery, only nine firms - two in clothing, three in the mechanical goods industry and four in electronics - make use of highly advanced technology, with electronic programming or control.

It should further be noted that small firms generally purchase second-hand machinery and equipment, which are considered "new" only in relation to older and obsolete goods. This is the typical procedure in clothing, and must also account to some extent for the higher incidence of problems with machinery in firms in that sector, a phenomenon that is aggravated by the lack of skilled manpower.

5.4.5 Raw materials (Table II.14, Annex A)

The vast majority of the companies (87 per cent) purchase all or most of their raw materials. In the remainder, raw materials are either entirely or predominantly supplied by customers (8 per cent), or they are supplied and purchased in equal proportions (5 per cent). Predictably, it is in the mechanical goods sector that we find the highest percentage of firms receiving half or more of their raw materials from customers (23 per cent).

Only five companies (three in clothing and two in the mechanical goods sector) do not purchase any of their raw materials. The other 95 buy them exclusively or predominantly on the domestic market. They are supplied, in most cases, by small and medium-sized companies (61 per cent), or by large companies, essentially Brazilian but including some foreign multinationals also(32 per cent).

Six firms, all in the electronics sector, import some inputs from abroad but only on a small scale. Electronics also has the highest proportion of companies depending on foreign/transnational suppliers, which is due to the fact that the most commonly used type of input in this industry are electro-electronic components. In clothing, textile companies are naturally the main suppliers and firms in the mechanical goods sector depend on the metallurgical industries for supplies of iron and steel.

Payment is usually on credit, with terms varying from a minimum of 30 to a maximum of 180 days; 60 days is more common in the mechanical goods and electronics sector and 90 days in the clothing sector. Only 10 per cent of the firms purchase one-half or more of their raw materials on delivery.

Approximately half of the firms (52 per cent) claim to have no problems with raw materials; 36 per cent have problems occasionally and 12 per cent frequently. The most serious or most common problems are of two kinds:

- non-attainment of the desired standard of quality or non-fulfilment of specifications (40 per cent), mentioned most frequently in the clothing industry;
- costs, constant price increases (33 per cent), mentioned chiefly in the mechanical sector.

In addition to these problems, mention was also made of difficulties connected with the scarcity or seasonal nature of products (17 per cent) and delays or slowness in delivery.

5.5 Human resources and the employment structure

5.5.1 Trend of employment (Table 5.7)

Besides the partners, the 100 firms visited employ around 2 500 workers: 1 113 in clothing, 812 in

Table 5.7

Companies: Evaluation of the work force - general trends

(in %)

	Breakdown		Total	Sector		
				Clothing	Electronics	Mechanical Goods
Work force at the time company was set up	Owner(s) only		26.5	22.5	23.4	35.8
	Fewer than today		63.3	67.5	70.0	50.0
	Same as today		4.0	2.5	3.3	7.1
	More than today		6.2	7.5	3.3	7.1
	Total (100 %)		98	40	30	28
Time of largest work force	Now		9.0	15.0	6.7	3.3
	Previously		91.0	85.0	93.3	96.7
	1983 - first half		4.0	5.0	3.3	3.3
	1982		14.0	22.5	16.7	-
	1981		17.0	10.0	10.0	33.4
	1980		20.0	17.5	16.7	26.7
	1975-79		29.0	27.5	36.6	23.3
	Prior to 1975		7.0	2.5	10.0	10.0
	Total (100 %)		100	40	30	30
	Present size (stratum)	Largest size ever (employees)				
Present size (stratum) and largest size ever	1 (up to 19 employees)	5-19	17.5	11.7	7.1	34.4
		20-49	23.1	23.6	25.0	20.7
		50-99	4.4	2.9	7.1	3.5
		100 or more	2.2	-	7.1	-
		Subtotal	47.2	38.2	46.3	58.6
	2 (20-49 employees)	20-49	15.4	17.7	10.8	17.2
		50-99	18.7	17.7	21.5	17.2
		100 or more	5.5	8.8	7.1	-
		Subtotal	39.6	44.2	39.4	34.4
	3 (50-99 employees)	50-99	6.6	2.9	10.8	7.0
		100 or more	6.6	14.7	3.5	-
		Subtotal	13.2	17.6	14.3	7.0
	Total (up to 99 employees)	5-19	17.5	11.7	7.1	34.4
		20-49	38.5	41.3	35.8	37.9
		50-99	29.7	23.5	39.4	27.7
		100 or more	14.3	23.5	17.7	-
		Total (100 %)	91	34	28	29
Reason for reduction of staff	Contraction of production/sales		73.7	58.9	82.2	82.8
	Changes of product, process, machinery		18.7	52.3	10.7	10.3
	Others	7.6	8.8	7.1	6.9	
	Total (100 %)		91	34	28	29

electronics and 544 in the mechanical goods industry.

Almost all the companies (90 per cent) show an increase in relation to their initial situation: 63 per cent started out with fewer employees than at present and 27 per cent had no employees to begin with apart from the partners, this case being more common in the mechanical goods sector (36 per cent of firms). Only 6 per cent of the companies had more employees at the outset than today, and 4 per cent have remained unchanged.

As might be expected, the "golden" age of companies in terms of total work force is however rarely that prevailing at the time of the survey: more than 90 per cent of the companies have had more employees in the past, that is, for most of them in the period 1975-80.

Only two firms in the electronics and one in the mechanical goods sectors were at their maximum employment level in 1983; all the rest had reduced in relation to previous years (between 1975 and 1981). Only a few enterprises in these two sectors (three in each) had their apogee in the "miracle" period (1970-73), which is to some extent due to the fact that many of them were relatively new during that period or undergoing a process of consolidation.

In clothing, a greater proportion of firms (15 per cent) were, at the time of the survey, at their highest level of employment and another large group (28 per cent) were at that level until quite recently (1982 and the first half of 1983). The remainder had their golden age in the period 1975-79 (28 per cent) or shortly afterwards, 1980-81 (28 per cent), coinciding with the heyday of the emerging "fashion industry".

Comparatively speaking, the companies were far larger in the past: Stratum 1 (up to 19 employees), which now includes 47 per cent of the firms, contained only 18 per cent in the "golden" age; Stratum 2 (20-49 employees) contained practically the same proportion as today (40 per cent), but Stratum 3 (50-99 employees) previously contained 30 per cent of the sample, against 13 per cent today. In addition, 14 per cent of the firms (13 in total - eight in clothing and five in electronics) were in the medium-size category, employing more than

100 persons; two of them, in electronics, have fallen into Stratum 1 (up to 19 employees); five are in Stratum 2 (20-49 employees) and six in Stratum 3.

In the electronics and mechanical goods sector, the major factor responsible for the decline in staff was the economic recession which, in 82 per cent of cases, led to a drop in production and sales. In the clothing sector, while the majority of firms (59 per cent) blame the fall in the employment level on the contraction of economic activity, quite a considerable proportion (32 per cent) mention other factors too, for example: changes of product and the manufacturing process, including increasing recourse to workers working at home and the acquisition of more modern machinery, raising the productivity of the work force.

5.5.2 Homeworkers (Table 5.8)

Hardly any firms in the mechanical goods sector and only two in electronics use homeworkers, but in the clothing industry almost 70 per cent (27 firms) have regular recourse to this type of manpower, which constitutes, as we have seen, the main source of external support for production in that sector of activity.

Clothing enterprises in our sample use on average 35 homeworkers, with no marked difference regarding size of the enterprise (35 in Stratum 1, 37 in Stratum 2 and 38 in Stratum 3). Most firms use either less than 9 or more than 50 workers (35 per cent of firms in each case). There are even three firms that use more than 100 homeworkers.

Homeworkers are almost exclusively female workers carrying out sewing operations at home. They are recruited in most cases (52 per cent of firms) through acquaintances of the owner(s); other channels mentioned are: information from the staff (20 per cent) and advertisements, usually posted up on the door of the company (16 per cent).

It lies beyond the scope of this research to analyse the phenomenon of homework in greater detail. (It would be virtually impossible to analyse this phenomenon on the basis of a survey in the firms since they themselves know very little about their home-based work force.)

Table 5.8

Companies: Homeworkers

(in %)

Breakdown		Total	Sector		
			Clothing	Electronics	Mechanical Goods
Frequency of use	Never used	70.0	32.5	93.4	96.7
	Occasionally used	5.0	10.0	3.3	-
	Always used	25.0	57.5	3.3	3.3
	Total (100 %)	100	40	30	30
Number of homeworkers usually employed	1-9	41.4	34.7	100.0	100.0
	10-19	13.8	15.3	-	-
	20-49	13.8	15.3	-	-
	50-99	20.6	23.1	-	-
	100 or more	10.4	11.6	-	-
	Total (100 %)	29	26	2	1
Usual form of recruitment	Information from acquaintances of owner(s)	50.0	52.0	-	100.0
	Information from employees of the company	25.0	20.0	100.0	-
	Advertisements (notices on the door, newspapers)	14.3	16.0	-	-
	Other	10.7	12.0	-	-
	Total (100 %)	28	25	2	1

The subject has, however, already been studied in depth by other authors such as Paiva Abreu,(1) whose main conclusions are as follows:

- Homework is not a new phenomenon, having existed in different forms in Europe from the early days of industrial development in the sixteenth and seventeenth centuries.
- In Brazil, although homework has also existed since the beginning of industrialisation, it gathered momentum with the emergence of the fashion industry in the early 1970s:
  "The large-scale use of the services of outside sewers forms the basis of the operations of garment-making enterprises of this kind. It makes it possible (...) to reduce considerably the amount of fixed capital in the form of rooms, machinery, etc., and also brings down labour costs, since outside workers are not registered and hence do not receive social welfare benefits (...). It further helps to solve problems related to the seasonal nature of production, supplementary manpower being recruited in the peak months. In addition, it facilitates the maintenance of premises (...) in the centre of the consumer market (the central and southern zones in the case of Sao Paulo), where high rents limit the possibilities of physical expansion."
- The above factors account for the persistent demand for this kind of labour. The supply is assured by a different set of factors such as: "the low capacity for absorption of labour in the most modern industrial sectors, the highly uneven distribution of income in societies such as that of Brazil, the weakness of the trade union movement (...) and women's position in the labour market."

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1. O trabalho industrial a domicilio na industria de confeccão. 1980. Op. cit.

- The same patriarchal ideology that makes woman responsible for housework and looking after the children "decrees that her participation in the family income is of secondary importance, thus lowering the cost of her services in the work force (...). The considerable instability and seasonal changes in the income earned from industrial work done at home (...) may be more easily accepted where the husband has a stable income, guaranteeing the minimum necessary for the family's survival, although the income earned by the wife is often used to purchase important items for domestic consumption (...). It is not surprising, therefore, to find a high proportion of married women in this section of the labour force (...)."(1)
- From the standpoint of the homeworkers themselves, however, this type of work has certain advantages, a fact which also accounts for the easy availability of manpower in this field: it can be easily reconciled with domestic tasks and compared with individual sewing brings in a higher and more stable income.

5.5.3 Occupational structure (2)

(a) Administrative personnel and staff directly engaged in production (Table 5.9)

Besides the owners, the 100 firms visited employ some 2 500 workers, 75 per cent of whom are engaged directly in production-supported activities (e.g. maintenance, quality control, planning and design); the remaining 25 per cent are employed in administrative and sales posts.

The mechanical goods sector has the highest proportion of staff directly involved in production (79 per

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1. ABREU. Op. cit. p.153.
2. Data relating to permanent staff, hence not including homeworkers.

cent) and electronics the lowest (72 per cent). In both electronics and clothing, the commercial section is more highly developed than in the mechanical sector. This does not mean, however, that there is no major difference in the organisation of sales between the two sectors - electronics and clothing: the latter employs over-the-counter sales personnel dealing with the public in shops or the company's sales section, while the former operates with technical sales personnel who visit companies to market their products.

The overall structure of the companies is, on the whole, what would be expected in the light of available data on the employment structure of small-scale enterprises. The proportions of administrative personnel in clothing and electronics are higher than the average for the two industries - 18 per cent in clothing, footwear and woven goods and 23 per cent in electrical equipment and communications (see Part I). Clearly, however, since the industry as a whole is more wide-ranging, its characteristics cannot be expected to coincide exactly with those of its component sectors.

The structure of the work force varies perceptibly in accordance with scale: the bigger the firm the greater the proportion of staff employed in administration or sales. Thus, in the smallest firms (up to 19 employees), the latter activities account for 14 per cent of staff, in Stratum 2 for 26 per cent and in Stratum 3 for 28 per cent.(1) This pattern is not found in electronics, however, the firms in Stratum 2 having a higher proportion of administrative staff than those in Stratum 3.

On the other hand, in over one-third (35.4 per cent) of the firms in Stratum 1, the entire work force is engaged in production and there is no administrative staff at all - these activities being carried out by the owners themselves; in Stratum 2, 8 per cent of the companies follow the same pattern but in Stratum 3 all the companies employ administrative/sales staff.

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1. Stratum 1 = up to 19 employees; Stratum 2 = 20-49 employees; Stratum 3 = 50-99 employees

Table 5.9

Companies: Structure of the work force, by sector and stratum

(In %)

	Breakdown	Total	Sector			Stratum		
			Clothing	Electronics	Mechanical Goods	1	2	3
Distribution of work force by occupational groups	Administration and sales	25.0	24.5	28.2	21.0	14.0	26.5	28.5
	Production and production support*	75.0	75.5	71.8	79.0	86.0	73.5	71.5
	Categories:							
	- Unskilled workers	4.7	3.5	4.4	7.7	5.5	4.2	5.1
	- Semi-skilled workers	36.0	36.0	45.6	22.1	39.8	32.6	38.8
	- Supervisors (of semi-skilled labour)	1.3	1.5	1.5	0.4	2.1	0.6	1.7
	- Skilled workers	25.7	31.2	8.7	39.7	32.0	27.6	19.8
	- Foremen (of skilled labour)	2.8	2.4	1.6	5.1	3.9	3.0	1.9
	- Technicians	4.0	0.9	8.5	4.0	2.7	4.8	3.7
	- Higher level staff	0.5	-	1.5	-	-	0.7	0.5
	Total (100 %)	2 469.0	1 113.0	812.0	544.0	437.0	1 179.0	853.0
Proportion of sample companies in each category	Administration and sales	80.0	80.0	90.0	70.0	64.6	92.3	100.0
	Unskilled workers	34.0	30.8	26.7	46.7	25.5	38.4	53.9
	Semi-skilled workers	83.0	92.4	93.3	63.3	72.3	94.8	92.4
	Supervisory (of semi-skilled labour)	24.0	35.9	30.0	3.3	17.0	18.0	69.2
	Skilled workers	84.0	89.7	66.7	96.7	80.8	87.2	92.4
	Foremen (of skilled labour)	47.0	53.9	30.0	50.0	29.8	58.9	76.9
	Technicians	34.0	18.0	60.0	30.0	17.0	41.1	76.9
	Higher level staff	9.0	-	30.0	-	-	15.3	23.1
	Total (100 %) ** - companies	100	40	30	30	48	39	13

* Including maintenance, quality control, planning and design personnel.

** The percentages do not add up to 100 per cent because they refer to the proportion of companies having employees in the different categories.

Stratum 1 = 5-19 employees; Stratum 2 = 20-49 employees; Stratum 3 = 50-99 employees.

There are also variations in this respect between the three sectors: the firms whose work force is entirely engaged in production and production-support activities represent 30 per cent of the firms surveyed in the mechanical goods sector, 20 per cent in clothing and 10 per cent in electronics. This variation reflects not only the characteristics of each sector but also differences in the composition and size of firms in the sample in each sector. As we have seen, mechanical goods is the sector with most firms in Stratum 1 - 60 per cent of the sample, against 40 per cent in clothing and 47 per cent in electronics.

(b) Manpower in production (Table 5.9)

The data obtained confirm expectations based on studies of the employment structure of small-scale companies (see Part I): the latter employ a smaller proportion of unskilled workers and of technicians and engineers, relying mainly on semi-skilled and skilled labour. The following are a number of observations on this category.

- Unskilled workers: The largest proportion of unskilled workers (8 per cent) are found in the mechanical sector, where they are employed in 47 per cent of the firms; they represent about 4 per cent of the labour force directly involved in production in the other two sectors and are employed in less than one-third of the companies - 31 per cent in clothing and 27 per cent in electronics. They belong to the category of so-called general production assistants or labourers.
- Semi-skilled personnel and associated supervisory staff: This category is found in almost all the firms (93 per cent) in electronics and accounts for almost one-half (47 per cent) of their overall staff, including in particular assembly line operators; in clothing, this category is also mentioned by over 90 per cent of the firms and represents 37 per cent of staff; in the mechanical goods

sector, the corresponding figures drop to 63 per cent and 22 per cent respectively. In the last two sectors, the staff involved includes operators of various kinds of machines typical of the field of activity concerned, e.g. cloth cutting, sewing, buttonholing and button-sewing machines and presses, boring machines and automatic lathes.

- Skilled workers and foremen: They are employed in almost all firms in the mechanical goods industry (97 per cent) and account for 45 per cent of its staff - working in occupations such as lathe operator, milling machine operator, fitter, toolmaker and general mechanic. In electronics, 56 per cent of the firms employ skilled workers in the same occupations as in the mechanical goods sector, as well as electricians and electronic assemblers; they do not, however, represent more than 10 per cent of the work force in that sector. In clothing, skilled workers account for 33 per cent of staff, mostly designers and sewers,(1) and they are mentioned by 90 per cent of the sample of companies.
- Technicians, engineers and other higher-level professionals: The highest proportion of employees in this category are found in electronics (10 per cent), where they form part of the work force of 60 per cent of companies; in the mechanical goods sector they are found in

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1. According to SENAI standards, sewers may be classified in two different ways: as semi-skilled (executing only one type of task such as sewing pockets) or as skilled (executing various operations or tasks). However, occupational analysts are doubtful about placing sewers in the skilled occupation category, save in cases where they are able to execute an entire article, which is rare, even in small-scale enterprises.

30 per cent of the sample and represent 4 per cent of the work force, consisting mainly of project designers and quality controllers; in clothing they account for less than 1 per cent and are mentioned by only 18 per cent of the firms, since the typical occupation in the category - that of stylist - is generally the responsibility of the partners themselves. It may be noted that engineers are found only in the electronics branch: they represent 1.5 per cent of the work force and are present in the ratio of one engineer to every two technicians. Moreover, technicians and engineers are found, on average, in the ratio of one to every group of 18 workers.

To sum up, the work force differs quite markedly from one sector to another, depending on the level of technology and organisation of production in each:

- clothing, which is characterised by a highly divisible process of production and a low level of technology, relies mainly on semi-skilled labour, a category that includes most of the sewers, who are otherwise classified as "skilled";
- mechanical goods, which uses specialised productive processes, relies mainly on skilled personnel; and
- electronics, given its high level of technology, needs a higher proportion of technicians and engineers than the other two branches, although its basic work force consists of semi-skilled labour. This structure illustrates how technological progress tends, on the one hand, to simplify occupations related to production and, on the other, creates the need for an "élite" to plan and control the process.

Patterns also vary according to size of the enterprise:

- there are no engineers and a smaller proportion of technicians in the smallest firms (up to 19 employees); this is offset to some extent by a higher proportion of skilled personnel; however, semi-skilled staff constitute the bulk of the work force in this category;

- in Stratum 2 (firms with 20-49 employees), the work force consists mainly of semi-skilled (33 per cent) and skilled (31 per cent) labour;
- in Stratum 3 (50-99 employees), the semi-skilled group accounts for 40 per cent of personnel and the skilled group for just over 20 per cent.

All in all, this would seem to bear out the theory that the degree of division of labour is closely related to the scale of an enterprise, with smaller companies tending to use relatively more skilled labour which is presumably more polyvalent or able to carry out various kinds of tasks.

(c) Women in production (Table II.15, Annex A)

The clothing sector is the major employer of women: of the 959 women workers in the sample, 83 per cent were in that sector, compared with 14 per cent in electronics and only 3 per cent in the mechanical goods sector.

In clothing, women were employed in all the companies visited and were predominant in all occupational categories except that of technicians, in which they represent only 33 per cent.

In electronics, 70 per cent of the companies employ women, chiefly in semi-skilled occupations (assembly line operators). There are few women in higher-graded occupations (including supervisory staff): they represent only 3 per cent of technicians and no women were to be found among skilled and higher-level staff.

The typical pattern of employment of women in the companies visited does not therefore depart from the general rule in the labour market: women are confined to occupations traditionally associated with domestic tasks (for example sewing) and/or to those calling for what are considered intrinsically female virtues (such as patience) and skills (such as lightness or delicacy of movement). The great advantage in employing women from the companies' point of view, however, lies in the fact that they accept lower wages than men, *inter alia* because of the already mentioned "secondary" nature of women's position in the labour market.

5.5.4 Use of the services of third parties

The main areas in which companies use the services of external human resources - self-employed individuals or other companies - are the following, in descending order of importance:

- *accountancy*, used regularly ("always") by 80 per cent or most of the firms in the three sectors;
- *execution of parts of the manufacturing process*: in confirmation of what was noted under 5.4.3 above, 77 per cent of firms have one or more stages of the manufacturing process executed elsewhere, always (56 per cent) or sometimes (21 per cent);
- *legal services*, utilised when necessary (at times) by 40 per cent of the companies or regularly by 15 per cent. Those in the electronics sector have less frequent recourse to such services, perhaps because their partners, inasmuch as they are more highly educated (see Chapter 6), are to some extent capable of solving legal questions themselves. Conversely those in the mechanical goods sector, whose level of education is lower, make relatively more demands on professional services in that field.
- *technical assistance for machinery and equipment* - sought, usually from time to time, by 49 per cent of the firms. Those that have most frequent recourse to services of this kind (80 per cent) are in the clothing sector, which is in keeping with the higher incidence of problems with machinery noted above (see 5.4.4). Those in the electronics sector, on the other hand, do not, for the most part (90 per cent), use such services, possibly because they have staff (technicians and engineers) capable of providing them;

- representation/sales - used, almost invariably on a regular basis, by 47 per cent of the firms, with little variation between sectors;
- transport/haulage - used "always" by 27 per cent and "sometimes" by 14 per cent of the companies, principally in the clothing sector. In general, it involves delivering the finished product to distributors and haulage between the company and executors of parts of the manufacturing process in the course of production;
- general maintenance of installations - the services of electricians, masons, painters and plumbers are called upon from time to time by 27 per cent of the companies. In the clothing sector, the proportion of firms using such services reaches 40 per cent, probably because in this field of activity the "visual" impact of the installations is more important for marketing the product; most of the companies have display and sales areas in the factory itself.

Other less frequently used services are:

- publicity - generally in publications with limited circulation; used on an occasional basis, by 22 per cent of companies;
- staff medical assistance - 12 per cent of the firms state that they use such services regularly and 5 per cent from time to time. In the mechanical goods sector, the percentage of those "always" having recourse to such services attains 17 per cent, indicating a higher incidence of accidents due to the type of equipment used (lathes, milling and boring machines);
- catering services for the staff - only six firms, two in each sector, provide catering services for their firms; those in the electronics and mechanical goods sectors do so regularly and those in clothing on an occasional basis.

5.5.5 The role of the partners (Table II.16, Annex A)

Some aspects of the participation of partners in the companies in the sample were mentioned in previous sections, especially their role in the process of creating/adapting/changing the product. The information given under this heading is intended to supplement and consolidate those observations, confirming the "owner's" vital role in small-scale enterprises.

As expected, the level of participation in registered capital is not a very good indicator of the decision-making processes in small firms. The data on entrepreneurs analysed in Chapter 6 bear out this assumption.

In 60 per cent of cases the registered capital is divided unevenly, but in most cases of this kind (49 per cent) the majority partners work in the firm; in only 11 per cent of the firms is the major share of the capital in the hands of other shareholders (including one case, in the mechanical goods industry, in which the shareholder is a corporate body). In 40 per cent of the firms, the registered capital is divided evenly among the partners.

In practice, however, in 82 per cent of the firms most of the decisions are taken by partners working in the company, including three entrepreneurs who are not strictly "partners" but the actual managers of the company.(1) In 17 per cent of the firms, all the partners, even those not working in the company, take part in the decision-making process, and if the first is associated with another company it is the latter that takes the decisions.

The general trend is for partners, even those who do not take decisions, to participate in the company's activities: in only one firm, in the clothing sector, were partners not involved in its activities. In clothing, the most common pattern, found in 51 per cent of cases, is participation by all partners in the work of the

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1. For reasons not fully explained, it is common in the case of small companies for the enterprise to be registered in the name of the wife or son.

firm. In the electronics and mechanical goods sector, it is more common for at least one or two partners to work in the firm but not all.

In the 63 firms in which two or more partners work, the latter generally divide up their responsibilities (90 per cent of cases): typically, one of them looks after production and the other(s) supervise(s) administration and sales. The partners responsible for production are frequently "technicians" by virtue of their training or practical experience.(1)

Thus, partners play an active part in production in more than 80 per cent of the firms; in only 6 per cent is this involvement occasional or sporadic and in another 6 per cent there is no involvement at all.

The activities of partners in production consist as a rule in planning, co-ordinating and supervising work in the factory (60 per cent of the firms); in quite a large proportion of firms (40 per cent), however, the partners actually execute certain tasks. This pattern is most common in the mechanical goods sector (50 per cent of the firms), probably as a result of the relatively large proportion of "former skilled workers" found among entrepreneurs in that sector (see Chapter 6).

5.6 Personnel policy

5.6.1 Recruitment and selection

Most companies declared that recruiting generally takes place merely in order to increase their number of employees. Only a small group admitted it had any difficulty keeping its personnel (18 per cent), and more than half of them said they had "little difficulty" in this respect. Companies in the clothing industry seem to

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1. There are cases in which two partners are directly involved in productive activities: one of the electronics companies, with three partners, has two (a toolsmith and an electronics technician) directly involved in supervising the manufacturing and assembly of their product.

be the most severely affected by work force turnover: 27 per cent said they find it difficult to keep employees, compared to 20 per cent in mechanical goods, and only 3 per cent in electronics.

Even though most companies did not admit they had any trouble keeping personnel, almost all of them (98) had recruited employees within the last two years. As few companies had actually expanded during that time, it is most likely that recruiting took place to replace employees that had left the company.

The highest turnover is generally found in the skilled and semi-skilled workers category. For example: seamstresses (in clothing); fitters (in electronics); and machine pressers, lathe-turners and burnishers (in mechanical goods). Companies also claimed that unskilled workers and labourers were hard to keep.

Some companies admitted that the high turnover in these occupations was due to low wages: "they leave whenever they are offered a little more". Others mentioned lack of discipline, personality conflicts, or a desire to find work closer to home.

A large number of companies (46 per cent) employ the owner's close relatives - his sons or brothers, for instance. Almost every company has one of the owner's relatives on its payroll, usually in a "white-collar job", such as salesman, secretary, receptionist, or else in production, in a technical or leadership position.

The electronics sector employs the highest number (60 per cent) of relatives, perhaps because it has the highest number of technical and administrative jobs. This sort of job has the advantage of offering the most suitable working conditions, and the greatest amount of status. It is probably for the opposite reason that only 35 per cent of the companies in the clothing industry employ the relatives of the owners.

(a) Recruiting skilled and semi-skilled personnel (Table 5.11)

Although the majority of companies did not acknowledge having any difficulty keeping employees, 64 per cent of them - 72 per cent in clothing, 70 per cent

Table 5.10

Company: Workers' turnover (in %)

Breakdown		Total	Sector		
			Clothing	Electronics	Mechanical Goods
Difficulty in keeping personnel	None	$\boxed{81.9}$	$\boxed{72.5}$	$\boxed{96.5}$	$\boxed{80.0}$
	A little	10.1	17.5	3.5	6.7
	A lot	8.0	10.0	-	13.3
	Total (100 %)	99	40	29	30
Workers who are the most difficult to keep	Unskilled	26.3	18.1	$\boxed{50.0}$	33.3
	Semi-skilled/skilled	$\boxed{73.7}$	$\boxed{81.9}$	$\boxed{50.0}$	$\boxed{66.7}$
	Total (100 %)	19	11	2	6
Relative(s) of the owner(s) who work(s) in the company	None	$\boxed{53.6}$	$\boxed{65.0}$	40.0	$\boxed{53.3}$
	Some	46.4	35.0	$\boxed{60.0}$	46.7
	- 1 person	27.2	20.0	30.0	33.3
	- 2 people	11.1	10.0	16.7	6.7
	- 3-5 people	8.1	5.0	13.3	6.7
	Total (100 %)	99	40	30	30

in electronics, and 50 per cent in mechanical goods - had recruited skilled and semi-skilled workers within the last two years (1981-83).(1)

The most coveted jobs were: seamstresses and designers (in clothing); fitters (in electronics); turners, milling machinists, repairmen, lathe-turners, drillers and blockers (in mechanical goods).

A small percentage (16 per cent) of the 64 companies which had recruited for these jobs dealt with the situation internally, by transferring and training employees from another occupation. The majority however, (84 per cent), recruited outside the company, advertising at the entrance door (36 per cent), through their own staff's recommendations (22 per cent), or through newspaper advertisements (19 per cent). In clothing and electronics, the technique most often used was advertising at the gate (in 40 per cent or more of cases), and in mechanical goods, through word of mouth and references from other employees (40 per cent).

Sixty-nine per cent of the 54 companies that recruited externally claimed to have no difficulty finding personnel, while in electronics and mechanical goods more than 80 per cent said they had "no difficulty" in this respect. In clothing, however, half of the companies admitted they had trouble finding employees, usually because applicants lacked the skills they were looking for. This is probably due to the fact that the clothing industry has remained relatively healthy, in spite of the economic crisis. Whereas in other sectors, such as mechanical goods and electronics, firms found it easy to hire personnel in a context of high unemployment, those in the clothing sector had to compete for skilled workers. In the face of competition, small firms obviously, find themselves at a disadvantage.

In most cases, company owners themselves selected the personnel (53 per cent). Only in electronics did the

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1. Supervisors and foremen were usually recruited inside the company, following a promotion, as we shall see later on.

Table 5.11

Company: Recruitment of skilled/semi-skilled personnel for production in the last two years (in %)

Breakdown			Total	Sector		
				Clothing	Electronics	Mechanical Goods
Form of recruitment	Within the company		15.7	10.3	25.0	13.3
	Externally		84.3	89.7	75.0	86.7
	- advertising at the gate		35.9	44.9	40.0	13.3
	- recommendation of other workers		21.8	17.2	15.0	40.1
	- newspaper advertisements		18.8	24.2	15.0	13.3
	- relations, agencies, other		7.8	3.4	5.0	20.0
	Total (100 %)		64	29	20	15
Difficulties in recruiting externally	None		68.6	50.0	86.7	84.7
	Some - a little		20.3	26.9	13.3	15.3
	Some - a lot		11.1	23.1	-	-
	Total (100 %)		54	26	15	13
Who is in charge of selection	The owner(s)		53.2	51.7	50.0	60.0
	Employee in charge of the section that is recruiting		39.0	34.4	50.0	33.3
	Head of personnel or the equivalent		4.7	6.9	5.0	-
	Other		3.1	-	10.0	-
	Total (100 %)		64	29	20	15
Type of selection process	Practical test and interview		53.2	51.7	50.0	60.0
	Practical test		34.4	48.3	25.0	20.0
	Interview		6.2	-	10.0	13.3
	None		6.2	-	15.0	6.7
	Total (100 %)		64	29	20	15
	Requisites	Importance				
Requisites for selection and how important each one is	Practice, previous experience	Some	15.7	6.9	25.0	20.0
		A lot	70.3	93.1	30.0	80.0
	References	Some	57.8	62.1	50.0	60.0
		A lot	18.7	20.7	20.0	13.3
	Degree of learning	Some	37.5	20.7	35.0	73.3
		A lot	6.3	-	10.0	13.3
	Professional course	Some	15.7	17.2	10.0	20.0
		A lot	17.2	6.9	20.0	33.3
	Sex	Some	23.5	13.7	45.0	13.3
		A lot	42.2	41.4	15.0	80.0
	Age	Some	25.0	24.2	15.0	40.0
		A lot	3.2	-	5.0	6.7
	Marital status	Some	6.3	3.5	10.0	6.7
		A lot	4.7	10.3	-	-
	Total (100 %)		64	29	20	15

person in charge of the area that was recruiting take a more active part in the process of selection (50 per cent). In other sectors this happened only in 39 per cent of the companies. The remaining 8 per cent of managers left the selection process to the head of personnel, or to some other employee.

Interviews, followed by practical tests, were the most commonly used methods for selecting employees (practised by 53 per cent of companies). Another 35 per cent - going up to 48 per cent in the clothing sector - only applied a practical test, i.e. the applicant had to show himself capable of carrying out his job on the work site. This "test" usually lasted a few hours, but some companies inspected an applicant's on-the-job performance for a full day or more, prior to taking him on. Other companies merely interviewed the applicant (6 per cent), or did not test him in any way if they were recruiting someone they knew.

The following prerequisites for admission were mentioned:

Prerequisites	Degree of importance (in %)		
	None	Some	A lot
Previous experience	14	16	70
Recommendations	23	58	19
Sex	34	24	42
Educational level	57	37	6
Job-related vocational courses	67	16	17
Age	72	25	3
Marital status	89	6	5

The table above indicates that companies' selection processes are based on three main factors: past experience, recommendations, and sex. Discrimination regarding the sex of the applicant is twofold:

- in favour of women, in clothing and electronics - although only in the case of fitters in the latter sector;
- against women, in mechanical goods.

Experience was mentioned as being very important by all of the companies in clothing and mechanical goods. In electronics, only half of the companies made the same statement. This is because its most sought after occupations - mainly as assembly line fitters - can be learned in a couple of hours.

On the whole, 28 of the 64 companies interviewed took the applicant's educational level into account for skilled and semi-skilled jobs. The rest declared they would take on employees who were illiterate as long as they knew their job well, and/or had good references.(1)

The most commonly required level of instruction is the former primary school, which now corresponds to the fourth year of first degree education. In electronics, a proportionately larger number of companies require applicants to have completed the 8 years first degree education.

Vocational training courses were mentioned by 21 companies in all, many of which (76 per cent) did not make any demands at all as to schooling, as long as the applicant had done some course work in his field. Only in the mechanical goods sector did training take on a certain degree of importance, 4 out of the 8 companies requesting vocational training gave preference to SENAI graduates.

In fact, unlike in the other sectors, both education and vocational training courses were considered important by the mechanical firms. Education was considered important by 86 per cent of the companies (quite important by 73 per cent) and training courses were considered important by 53 per cent (even very important by 33 per cent).

Few companies considered age and marital status as "quite" or "very" important, although in practice, these prerequisites count a lot. Neither married women, on the one hand, nor persons under 18 or over 40 on the other, are commonly employed. Nor are men who have not completed their military service. In actual fact, applicants, even though they do not fulfil these requirements are nonetheless employed, but they are not declared or given

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1. In practice, things are quite different. Among skilled and semi-skilled employees, there were no illiterates in the companies that were interviewed.

any work papers.(1)

(b) Recruiting technical and higher level personnel

In the last two years, only 12 companies recruited personnel for this type of job; 10 were in the electronics sector, 1 in mechanical goods, and 1 in clothing.

A clothing company hired a designer through references given by someone the manager knew. It is the manager himself who selected the person after a test and an interview; a lot of importance was then given to past experience, references and education - in this particular case, 8 years of first degree education.

A mechanical goods company hired a draughtsman and budget planner through newspaper advertisements. The employee with whom the applicant was to work was given the responsibility of selecting him, and only one interview was conducted. The selection criteria were experience, education (a completed secondary education was required), training courses, sex (male), and age (the person was to be between 18 and 40 years).

In the 10 electronics companies which recruited higher level personnel, the most sought after type of professional was the electronics technician. Only three companies recruited engineers and only one took on a trainee - as electronics technician. The general characteristics of the selection process were as follows:

- There is only one case of an employee recruited internally via a promotion. All the others were recruited externally. To do so, they relied on references, (managers, connections and other employees' recommendations), advertisement at the gate, employment agencies, and, in the case of the trainee, school placement offices.
- In six companies, interviews were conducted by the manager himself. In four others, the employee in charge of the area that was

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1. This information cannot be obtained from the firms, but by means of door-to-door surveys.

recruiting conducted interviews.

- In four companies, applicants did practical tests and had interviews. In three companies, there was just an interview, and in one other, only the test was given. In two companies, the applicant did nothing besides showing his work papers.
- The criteria taken into account by all companies and usually considered "very important", were education and training courses. Actually, these criteria could be narrowed down to one single requirement. For technicians, the usual requirement was to have completed a training course in electronics, which is equivalent to a secondary school certificate and for engineers, a degree in their area of specialisation was obviously required (in electrical or electronics engineering). In no case were preferences for any particular schools mentioned.
- In addition, seven companies looked at references. Six companies favoured male applicants, two established an age limit (19 to 40 years), and one gave preference to married applicants.

5.6.2 Training practices

At least half of the companies had offered training courses in the area of production in the last two years, 29 per cent had never done so, and 19 per cent had not offered a course for over two years. Electronics companies trained personnel most often, and for this reason were probably less demanding in relation to past professional experience (Table 5.12).

The following characteristics of the firms' training practices are based on data supplied by 71 companies. Training:

- usually consists of practical demonstrations given on the job, within the company itself;
- is usually taught by someone in the company (in 89 per cent of cases), probably by a more experienced employee, or by the manager himself

(35 per cent);

- generally lasts for one month at most (67 per cent of companies), although the usual duration is one week to one month. In 18 per cent of the companies, courses last one to three months, and in only 8 per cent is this limit surpassed. In the remaining 6 per cent of the companies, the duration of the training period varies.

Training obviously takes place along very informal lines. Few firms actually offer training courses for their personnel. This is consistent with the results of previous research pointing out that organised and systematic training courses are not a common occurrence in small firms (see Part I).

(a) Maintaining apprentices at SENAI

Forty-five per cent of the companies in our sample - 57 per cent in clothing, 53 per cent in mechanical goods, and 20 per cent in electronics - should send trainees to SENAI or employ SENAI apprentices, according to the last survey done by SENAI itself, in the capital of São Paulo in 1980-81.(1)

However, only 13 per cent had done so, only 7 per cent had trainees in SENAI at the time of the survey, and 80 per cent had never done so at all. Most of the companies that had sent trainees to SENAI in the past were in the mechanical goods sector (20 per cent), and those who did so at present (in 1983) were in electronics (10 per cent).

Companies usually justified their failure to comply to regulations by claiming they had neither the means nor anything to gain from maintaining trainees. On the other

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1) Industrial undertakings are obliged to maintain/send trainees to the SENAI schools. They must do so in a proportion that varies from 5 per cent to 15 per cent of their total number of skilled workers. If this requirement is not fulfilled, fines must be payed upon inspection by Regional Police Headquarters in charge of Labour.

Table 5.12

Company: Training practices (in %)

	Breakdown	Total	Sector		
			Clothing	Electronics	Mechanical Goods
Training programmes for personnel in production	Never did any training	29.0	37.5	3.3	43.4
	Has not done any training for over two years	19.0	25.0	6.7	23.3
	Organise training sessions sometimes	24.0	25.0	33.3	13.3
	Train personnel regularly	28.0	12.5	56.7	20.0
	Total	100	40	30	30
Who is responsible for training	Someone in the company	88.7	80.0	96.5	88.3
	Someone from outside the company, or an institute	7.0	12.0	-	11.7
	Both	4.3	8.0	3.5	-
	Total (100 %)	71	25	29	17
Training instructor in the company	The owner(s) himself	34.9	31.9	27.6	53.3
	An employee with more experience in this area of work	57.6	50.0	72.4	40.0
	Other	7.5	18.1	-	6.7
	Total (100 %)	66	22	29	15
Type of training	Practical, on-the-job training	84.6	72.0	93.1	88.3
	Practical demonstration/ classes/lectures	15.4	28.0	6.9	11.7
	Total (100 %)	71	25	29	17
Place of training	In the company itself	90.1	84.0	96.5	88.3
	In the company and/or outside	9.9	16.0	3.5	11.7
	Total (100 %)	71	25	29	17
Usual duration of training programmes	Less than 1 week	24.3	20.8	27.6	23.6
	1 week-1 month	43.0	37.6	48.3	41.2
	1-3 months	18.5	25.0	13.7	17.7
	More than 3 months	8.5	8.3	6.9	11.7
	Varied	5.7	8.3	3.5	5.8
	Total (100 %)	70	24	29	17

hand, the companies that did comply admitted they did so merely to avoid paying a fine.

(b) Using the incentives provided for under Law 6297/75

Law 6297/75, on fiscal incentives for vocational training, allows companies to deduct from their income tax twice the amount of their expenses incurred by vocational training, up to a maximum of 10 per cent of their taxable profits.

When in 1980, SENAI promoted a study to find out how companies used these incentives, it was found that 9 per cent of the companies surveyed were small companies that knew little about incentives or how to use them. This was basically because they did not usually train personnel (see Section 3.5 in Part I).

Likewise, the majority of companies in the survey (62 per cent), were not familiar with Law 6297/75. Thirty-four per cent said they had heard of it, but had never made use of the incentives it provided, and only 4 per cent - three companies in clothing, and one in mechanical goods - had received, or were taking advantage of them at present. Of these four companies, three received advice from SENAI on how to make use of these incentives, one did so on its own, two used the incentives to send trainees to SENAI, and two others, to promote training programmes.

Although most companies claim to train their employees, they do so in a very informal manner, which does not allow them to profit from the incentives provided by the Law.

CHAPTER VI

THE ENTREPRENEURS

Most firms are not headed, as we have seen, by just one person. The one we chose to interview, whom we shall refer to as "the entrepreneur", can be considered as the general manager - that is, the most senior partner or the one most likely to know about various aspects of the firm. Apart from questions on his firm, we asked this manager a number of questions regarding his own social and family background and the kind of education and training he has had. We also enquired about his entire professional history, from his first job to the one he now holds. The answers were as follows.

6.1 Socio-economic characteristics

6.1.1 Personal data

(a) Sex (Table II.17, Annex A)

Only 12 of the 100 entrepreneurs interviewed are women. Nine of them are in the clothing industry, two are in mechanical goods, and one is in electronics. Even though these figures seem low, they are actually higher than the true proportion of women entrepreneurs in the manufacturing industry in the Greater São Paulo area (estimated at 9 per cent in 1976).(1) This slight

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1. Proportion of women in the total number of entrepreneurs. PNAD - 1976.

overrepresentation of women in our study is the result of our having included the clothing sector in our survey; this sector, following the growth of the "fashion industry", includes a higher than usual proportion of women entrepreneurs.(1)

(b) Age (Table II.17, Annex A)

The average age for most entrepreneurs is 43 years, with no difference from one sector to another. About 92 per cent of the group are between 30 and 59 years old. In this respect, the entrepreneurs in our survey do not differ significantly from the majority of the Greater São Paulo area's industrial employers, 74 per cent of whom were in the same age bracket in 1976. As to those aged between 20 to 29 years, and those aged 60 or older, they represented 14 per cent and 12 per cent respectively of the total number of employers in 1976. The equivalent percentages for entrepreneurs in our sample group are 6 per cent and 2 per cent, respectively. Perhaps there are fewer entrepreneurs in these age brackets in our study because we selected the most active partner in the company for the interview, thus probably excluding the youngest and the eldest partners.

The majority of entrepreneurs in our sample are married (80 per cent), which corresponds to their age bracket profile in the population.

(c) Place of residence

Most of the entrepreneurs live near to their company, either in the very same area (33 per cent), or in one close by (42 per cent). For this reason, most of the entrepreneurs in clothing live in the South of São Paulo (44 per cent), or in the centre (31 per cent), both areas being close to their companies. Those in electronics also live in the South of São Paulo (68 per cent), and those in mechanical goods are spread out between East (48 per cent) and South São Paulo (35 per cent).

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1. ABREU, 1980 Op. cit.

6.1.2 Geographic background (Table II.17, Annex A)

About two-thirds of the managers interviewed were born in the State of São Paulo; 44 per cent in the State capital itself or in another metropolitan area of the State. Twenty per cent of the group were born in the interior of the State of São Paulo, and 12 per cent only in another State. A significant number were born in another country, however, making up 25 per cent of the sample in the clothing and mechanical goods sectors, and 20 per cent of the electronics branch. Percentages of sons of foreigners are even higher: 55 per cent of the entrepreneurs' fathers, and 45 per cent of the entrepreneurs' mothers were born outside Brazil.

This distribution is quite different from that of the São Paulo State male population, 73 per cent of whom were born in the State itself, 24 per cent in another Brazilian State, and only 3 per cent in a foreign country. In other words, there are less inter-state migrants and more foreigners and sons of foreigners among entrepreneurs than in the rest of the population. This finding does not come as a surprise: inter-state migrants generally come from a low socio-economic background and tend to hold jobs which are lower on the occupational scale. For this reason, they rarely become entrepreneurs. As for foreigners, several studies have been carried out on their role in São Paulo's industrial bourgeoisie. According to these studies, European, Asian and Oriental immigrants who arrived in Brazil in the 1930s shared a common characteristic in the commercial and industrial activities they were to pursue. That is, there was generally a marked concentration of groups belonging to the same nationality in a given geographic and economic sphere. This concentration resulted from a variety of factors: the previous occupation in their country of origin, a search for cultural bonds, assistance given to newly arrived immigrants by those already established, and the work opportunities available at the time of their arrival.(1)

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1. DEAN, Warren. A industrializaçao de São Paulo. São Paulo, Difel. 1971; RATTNER. Coord. 1983 Op. cit.

In this manner, São Paulo's textile industry and commerce became increasingly dominated by specific migrant groups made up of Syrians, Lebanese, and later on, Jews. Factories tended to be built in the centre of Sao Paulo, particularly around Bom Retiro. In terms of occupational experience, the strong point of these groups was their knowledge of commerce and crafts. In Brazil, during the first half of the century, retail was one of the only options open to immigrants who did not want to become workers either in agriculture or the Nation's budding industry. A typical pattern established by these groups was to start off as door-to-door salesmen, to go on to retail and wholesale, and finally, to buy their own business.

These characteristics appear quite clearly in our study. In the clothing sector, most foreigners, or sons of foreigners came from Syria, Lebanon, Greece and several East European countries - namely from Russia, Rumania, Hungary, Poland and Austria.

There is only one entrepreneur of North Korean origin in our sample of the clothing industry. Although it is often said that the North Koreans are literally invading this economic sphere in Brazil, most of them enter the country and work there illegally, making it virtually impossible to include them in a survey. Indeed, firm surveys, such as this one, are not the most effective way of collecting data on clandestine groups or illegal workers: they are too difficult to make contact with and to interview.

The mechanical goods and electronics sectors present other characteristics of the immigrant profile during the first half of the century. These sectors incorporated migrant technicians and factory workers who chose to join São Paulo's budding industry. Thanks to their know-how and experience in technical matters, they eventually became entrepreneurs. In our sample most of the managers in mechanical goods and electronics, or at least their parents, came originally from Italy, Spain or Germany.

The majority of the 34 entrepreneurs born in other States of Brazil have been living in São Paulo for more than ten years; only two of them have not been there for at least that long. Twenty-six years is the average number of years of residence in the State. In mechanical goods the average is nearly 30 years, and not one of the entrepreneurs interviewed in this sector has been in São Paulo for less than 15 years.

Given the average age of the group as a whole, the above figures show that the majority of them reached Brazil as children or adolescents. Most of the group (47 per cent), declared they came for personal reasons, which in many cases probably means that they came together with their families. A significant percentage (32 per cent) came looking for work, which is a common reason among young immigrants.

A look at how long most immigrants have been in São Paulo (or in the country in the case of foreigners), reveals that most of them settled down in Brazil during the '50s. At this time, Brazil, and São Paulo in particular, went through a period of accelerated urban and industrial growth.

6.1.3 Social Background (Table II.18, Annex A)

The entrepreneur's social background can be assessed by looking at such factors as parents' education, type of activity, occupation and status.

(a) The parents' education

The level of instruction of the fathers of entrepreneurs is closely tied to that of their mothers (Pearson's correlation coefficient = 0.68), which means that they come from similar social backgrounds. In subsequent analysis we therefore refer to data concerning the fathers.

Forty per cent of the fathers did not attend school beyond the former primary school (now the equivalent of the fourth year of first level education). About 16 per cent did not even get that far, and can be classified as "illiterate or incomplete primary school leavers". Another 20 per cent of the fathers completed junior secondary (now the 8th year of first level education). Thus, 70 per cent of them in total did not go beyond the present level of compulsory schooling (end of first level education). Fifteen per cent only completed secondary education, and only 8 per cent obtained a degree.

The fathers of entrepreneurs in electronics are the most educated of all: 23 per cent of them completed secondary education and 20 per cent went to university.

Although one might at first conclude that the fathers of entrepreneurs have had little education, they are actually somewhat privileged in relation to the population as a whole. In the Greater São Paulo area, for instance, almost 50 per cent of men between 60 and 69 years of age - presumably the entrepreneurs' fathers belong to the same age-bracket - did not finish primary school; 32 per cent completed primary, and only 18 per cent went on to further studies.(1)

(b) Field of activity: Sector and industry

A large percentage of fathers (48 per cent) worked in the industrial sector for a long time; 34 per cent in services and 18 per cent in the agricultural sector.

Past industrial experience is most marked among the fathers of entrepreneurs in mechanical goods (5 per cent) and electronics (50 per cent): most of them worked in the same industry as their sons, or in a related area (such as steelworks or transportation equipment for fathers of entrepreneurs in mechanical goods). Although many of the fathers of heads in the clothing sector (41 per cent) came from an industrial background, a significant proportion (23 per cent) worked in the agricultural sector. In mechanical goods and electronics, the percentages are 18 per cent and 10 per cent, respectively. Nowadays, these figures may seem high, but it should be remembered that the professional life of most of the fathers in this study took place before the 60s, when agriculture was still the key economic sector in the country and in São Paulo itself (See Part I).

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1. PNAD - 1976.

(c) Occupation and status

Occupations have been rated according to status, in an ascending 15 position scale.(1) The fathers of entrepreneurs were generally located at level 8. About 55 per cent were located between levels 8 and 10, which correspond to occupations such as technician, manager and small entrepreneur. The latter occupation was mentioned quite often. In fact, most of those who were interviewed (60 per cent) had fathers who had been self-employed, or who had owned micro, small or medium-sized businesses, for example: small or medium-sized farms, bars, bakeries and grocery stores; garages, clothes stores, stores specialising in household appliances; factories in the clothing industry, in electricity and electronics and in mechanical goods.

The fathers of entrepreneurs in electronics had the highest status average: level 9, most of them (73 per cent) being located in the upper half of the scale (levels 8 to 14). The fathers of entrepreneurs in clothing and in mechanical goods had a lower status average: level 7. Although, as in electronics, quite a number of them were concentrated in the upper half of the scale, a larger proportion appeared in the lower half (01 to 04). Jobs in the lower half of the scale generally correspond to manual jobs requiring little or no skills, and are associated with low social prestige. Typical examples of occupations at these levels are: agricultural workers and small self-employed farm owners and drivers (Table II.19, Annex A).

A strong correlation has been found between the father's degree of education and his occupational status (Pearson's Coefficient = 0.61). The most educated ones usually occupied the higher or most prestigious job on the occupational scale.

Two thirds of the entrepreneurs are located higher

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1. We have taken into account the job that the father had held for the longest time. This scale of occupational status developed by SENAI is presented in Annex F.

than their fathers on the occupational status scale. As owners of companies with 5 to 99 employees, they are at status level 10. Twenty-six per cent are at the same level as their father, and only 7 per cent are below. The largest proportion of those who have not surpassed or equalled paternal status is in electronics (17 per cent). This is because their fathers were at a higher social level than the rest to start with.

In short, the entrepreneurs in our sample resemble the metropolitan area's industrial employers, as far as sex, age and marital status are concerned.

Most of them (64 per cent), were born in São Paulo and come from the metropolitan area. A significant percentage however, (24 per cent) were born in another country, and over half of the group had a father or mother of different nationality. This is consistent with findings from many other studies, i.e., the strong influence of migrants on the establishment of São Paulo's industrial bourgeoisie.

As to social background, the majority of entrepreneurs come from the "small bourgeoisie", made up of self-employed workers, or owners of small and medium-sized firms, such as: small- and average-sized farms, bars, bakeries and grocery stores; garages and factories belonging to the three sectors in this study.

Almost half of the fathers were employed for the longest time in the industrial sector. This can therefore be considered as their main area of employment. Most of them worked in the same or in a similar field as their son/daughter.

Most parents (77 per cent) were educated to a level equivalent to or less than eight years of schooling. In fact, a large percentage of them did not go beyond primary school, which during their school years, corresponded to the minimum schooling requirement. Nonetheless, their educational background seems privileged compared to that of the metropolitan population belonging to the same age bracket (60 to 69 years).

These factors reveal that entrepreneurs may have had some advantages to start with, and that these advantages helped them to reach their present position.

Although few of those interviewed inherited their first company - most actually worked for a long time as employees before setting up their own business - they did come from a better social background than the average industrial worker (better also than the average SENAI trainee, or students in a technical school.)

The entrepreneurs in electronics are relatively more privileged than the others. Their parents had a better education and their occupational status was higher. Furthermore, a larger proportion of them had links with the urban economy. In addition, a higher number of entrepreneurs in electronics are sons of entrepreneurs (60 per cent), a factor which in their opinion, had a decisive influence on their professional career.

Parents of entrepreneurs in mechanical goods and clothing had a similar status and educational profile, but usually worked in a different sector of the economy. Fathers of entrepreneurs in the clothing sector had relatively less ties with the industrial sector (41 per cent), and were comparatively more involved in commerce and services (36 per cent) or in the agricultural sector (23 per cent). In mechanical goods these proportions were 57 per cent, 25 per cent and 17 per cent, respectively.

6.2 Level of preparation of entrepreneurs: their schooling and vocational training

6.2.1 Schooling (Table 6.1)

Entrepreneurs are, on the whole, relatively more educated then the rest of the population. Eighty-two per cent of them completed at least first level education, while the equivalent percentage for the Greater São Paulo's 40 to 44 year-old, male population is only 30 per cent. The proportion of entrepreneurs who completed secondary education or studied further, is also higher: 39 per cent compared to a mere 8 per cent for the rest of the population. Furthermore, 30 per cent followed university courses, and some even obtained a degree (compared to 9 per cent of the reference group).

Fourteen entrepreneurs have taken technical courses, mainly in accounting (6 entrepreneurs). Two graduated from a technical course in electronics - one is now in the clothing sector, and the other in the electronics sector - and two graduated from a technical school in mechanics - both remaining in the same field. The rest took industrial or commercial courses, which were not directly related to their present activity.

Ten of the 30 entrepreneurs who went to university are engineers. Most of them have a degree in an area related to their work, in electronics or mechanical engineering. Twelve entrepreneurs went to business school, or obtained a degree in either economics or accounting. The rest went to university to study law, medicine or another scientific specialisation.

There is a significant correlation between the entrepreneur's education, and the size of his company (indicated by surface area, turnover, and number of employees). A significant correlation coefficient is also found between company size and the entrepreneur's social background, which, in turn, is determined by his father's level of education and occupational status. In other words, entrepreneurs with the best social background are also the most educated and own the largest companies (Table 6.2).

This relation between education and social background is consistent with the selective nature of the country's educational system, which offers better chances of success to those from a higher socio-economic background.

Furthermore, the significant correlation between these variables and company characteristics give weight to the theory that the performance of a small company is strongly linked to the profile of its owner. In other words: those who are high up on the social and educational scale seem to have a better chance of running their business successfully.

The most educated entrepreneurs are found in electronics, and the least educated, in mechanical goods. In fact, 50 per cent of the electronics entrepreneurs have been to university, and most of them obtained a degree. This brings the group's average years of study to 13. On

Table 6.1

Entrepreneurs: Educational level and area of specialisation

(in %)

Breakdown			Total	Sector		
				Clothing	Electronics	Mechanical Goods
Education level (years of study)	1st level	Incomplete primary school (3 years)	2.0	-	3.3	3.5
		Complete primary school (4 years)	12.3	10.3	6.7	$\boxed{20.7}$
		Incomplete junior high school (7 years)	4.1	5.1	-	6.9
		Complete junior high school (8 years)	$\boxed{15.3}$	$\boxed{18.0}$	6.7	$\boxed{20.7}$
	2nd level	Incomplete secondary	3.1	5.1	3.3	-
		Incomplete technical secondary	4.1	5.1	-	6.9
		Complete secondary	$\boxed{19.4}$	$\boxed{23.0}$	$\boxed{23.3}$	10.3
		Complete technical secondary	9.2	10.3	6.7	10.3
	3rd level	Incomplete higher education	3.1	5.1	3.3	-
		Complete higher education	$\boxed{27.6}$	$\boxed{18.0}$	$\boxed{46.7}$	$\boxed{20.7}$
	Total (100 %)		98	39	30	29
Field of technical course (complete or not)	Electro-electronics		14.3	14.3	50.0	-
	Mechanics		14.3	-	-	40.0
	Other industrial field not related to the present job		7.1	14.3	-	-
	Accounting		42.9	57.1	50.0	20.0
	Other commercial field		21.4	14.3	-	40.0
	Total (100 %)		14	7	2	5
Field of study during higher education	Engineering-related to the present job		26.6	-	26.7	66.6
	Other engineering specialisation		6.7	11.1	6.7	-
	Business administration		23.3	44.5	13.3	16.7
	Economics		10.0	-	13.3	16.7
	Accounting		6.7	-	13.3	-
	Law		6.7	-	13.3	-
	Biomedical work		10.0	22.2	6.7	-
	Other - in the sciences		10.0	22.2	6.7	-
	Total (100 %)		30	9	15	6

the other hand, in mechanical goods one-third of the entrepreneurs did not complete elementary school, and the average number of years of study among them is only 9.5. The average in clothing lies between these figures. Forty-four per cent completed junior high school, and attended school for an average of 11 years.

A lower, but nonetheless significant correlation is found between education and geographic background, for both entrepreneurs and their parents. On the whole, the most educated entrepreneurs are those whose fathers were born in the City of São Paulo, and curiously, the entrepreneurs who were born in other Brazilian States. This shows that relatively successful inter-state migrants are just as well prepared as the population with whom they are competing. They therefore cannot be compared to the usual number of migrants that come each year into São Paulo.

There was no definite trend in the choice of professional activity, as far as geographic background was concerned. This was probably because social background has more influence in this respect. In short: access to a better education depends more on social background than on place of birth of either parent or offspring.

A significant correlation between age and educational level is not found. This assumption that younger entrepreneurs are more educated cannot be checked, as the group is fairly uniform with respect to age.

6.2.2 Vocational Training (Table 6.3)

Besides their regular studies about half of the group had taken additional training courses. The most popular ones were related to the entrepreneur's professional activities. In fact, a high Pearson's Correlation Coefficient is found between the total number of courses completed and the present occupation (0.92), as well as between the total number of course hours and the present occupation (0.70). In short, it is likely that entrepreneurs seeking additional training, do so with the intention of improving their professional performance.

Only 11 entrepreneurs began a vocational training course without completing it, and one of them, in

Table 6.2

Entrepreneurs: Pearson's Correlation Coefficient between the entrepreneur's education, his social background and the size of his company

Indicators	Entrepreneur's education	Paternal education	Paternal occupational status	Plant area	Turnover in 1982	Number of employees
Entrepreneur's education	1	0.38	0.38	0.32	0.34	0.38
Paternal education	0.38	1	0.61	0.47	0.44	0.37
Paternal occupational status	0.38	0.61	1	0.47	0.42	0.42
Plant area	0.32	0.47	0.47	1	0.60	0.61
Turnover in 1982	0.34	0.44	0.42	0.60	1	0.82
Number of employees	0.38	0.37	0.42	0.61	0.82	1

Coefficient significant at 5 per cent level.

mechanical goods, was still attending the course he had begun. The courses which were still to be completed also focus on present professional activity.

Among those who had taken training courses, about half had completed only one course; 23 per cent had completed two, and 28 per cent, three or more courses. Entrepreneurs had, on average, 1 200 hours of professional training; those in clothing 550 hours, those in electronics 1 200 hours, and those in mechanical goods had altogether nearly 1 800 hours. On the whole, these averages are consistent with the type and structure of courses available in each area. Courses relating to clothing are usually of shorter duration than those in mechanics. The mechanics courses offered by SENAI are particularly long. Of the entrepreneurs who had taken some kind of courses, 21 per cent of those in mechanical goods had taken SENAI courses, while only 7 per cent of those in electronics, and 13 per cent of those in clothing had done so.

The number of courses and course hours completed in each sector, all entrepreneurs included, are as follows:

Sector	Average number of courses	Average number of hours
Clothing	0.8	212
Electronics	0.9	569
Mechanical goods	1.1	1 104
Total	1.0	585

These figures confirm that entrepreneurs in mechanical goods follow the most training courses and those in clothing, the least.

This result, combined with the finding that it is precisely the entrepreneurs in mechanical goods who have the least amount of formal education, leads us to enquire whether training courses were being taken to make up for a lack of formal education. The hypothesis seems groundless, however, as the number of courses taken by

Table 6.3

Entrepreneurs: Vocational training

(in %)

Breakdown		Total	Sector		
			Clothing	Electronics	Mechanical Goods
Courses completed	None	51.0	59.0	53.5	38.0
	Some of which	49.0	41.0	46.7	62.0
	- at SENAI	13.3	12.8	6.7	20.7
	- related to the entrepreneur's activities	42.9	35.9	36.7	58.6
	Total (100 %)	98	39	30	29
Incomplete courses	None	88.8	87.2	93.3	86.2
	Some of which	11.2	12.8	6.7	13.8
	- at SENAI	2.0	2.5	-	3.5
	- related to the entrepreneur's activities	8.1	10.3	3.3	10.3
	Total (100 %)	98	39	30	29
Number of courses completed	1	49.0	53.3	42.9	50.0
	2	23.4	20.0	28.5	22.2
	3	14.9	6.7	14.3	22.2
	4 or more	12.7	20.0	14.3	5.6
	Total (100 %)	47	15	14	18
Average number of hours (for courses which were completed)	Overall	1 201	551	1 220	1 779
	At SENAI	824	92	340	1 596
	Related to the entrepreneur's activities	1 003	369	566	1 884
Institution at which the longest course was taken	SENAI	19.2	20.0	14.3	22.2
	Union, class association	4.2	6.7	7.1	-
	Independent school	29.8	39.9	35.8	16.7
	Company	4.2	6.7	7.1	-
	Higher education institution	14.9	20.0	14.3	11.1
	Technical school	12.8	-	-	33.3
	Other (SENAC, SESC, DEPROV, abroad)	14.9	6.7	21.4	16.7
	Total (100 %)	47	15	14	18
Institution at which the longest course as well as the course most related to the entrepreneur's activities was taken	SENAI	20.5	21.4	15.4	23.6
	Union, class association	4.5	7.1	7.7	-
	Independent school	31.8	43.0	38.5	17.6
	Higher education institution	15.9	21.4	15.4	11.8
	Technical school	11.4	-	-	29.4
	Other (SENAC, SESC, DEPROV, abroad)	15.9	7.1	23.0	17.6
	Total (100 %)	44	14	13	17

entrepreneurs with a good educational background (measured by the average number of years of study) and the number of courses taken by those with a poor one, does not alter significantly.

Age is found to be positively related to vocational training. In all three sectors, with one exception in clothing, the average number of course hours increases together with a corresponding increase in the age of the entrepreneurs. See data below:

Age bracket	Average number of hours of vocational training		
Years	Clothing	Electronics	Mechanical Goods
20-29	0	85	204
30-39	259	357	434
40-49	30	506	1 347
50 or more	333	927	1 313
Total	212	569	1 104
(n)	(39)	(30)	(29)

Social and geographic background do not interfere significantly with vocational training. Entrepreneurs with parents of foreign extraction, as well as those who were born in the state capital or metropolitan area do have a greater number of courses to their credit, but differences in this respect are not significant.

The main institutions for vocational training are the so-called private "independent education" schools (see Part I), above all for those in clothing and electronics. In the mechanical goods sector it is the technical schools that have the most impact. Among these, the Getulio Vargas Technical School, which belongs to the State network and is located in São Paulo's municipal area, is the one most often mentioned.

SENAI is the second-most important institution for training entrepreneurs. Its impact is greatest in the clothing and mechanical goods sector, as its electronics courses are still in their initial phase.

Training courses offered by institutions of higher learning are also important, especially in the clothing industry. Among these institutions the Getulio Vargas Foundation stands out with a programme that includes several evening courses.

The agencies and trade associations such as SENAC, SESC, DEPROV, are mentioned, as well as courses given abroad.

6.2.3 The educational and training background of entrepreneurs and their professional performance

For the type of activities that entrepreneurs undertake, it is difficult to ascertain whether formal schooling or vocational training is the most useful. In fact, both are useful. One is important from a purely social standpoint, providing general knowledge valuable in the day-to-day world of affairs. The other offers technical know-how and problem-solving techniques.

In this sense, the most privileged entrepreneurs are those in electronics. Besides having followed a reasonable amount of specific training courses, many of them continued their studies as far as higher education, which at this level have a professional bias. These advantages, combined with their better social background, probably explain why the electronics group feel the most self-confident about job performance. Only 37 per cent of them admit they feel weaknesses in their general education or specialised knowledge, while the proportion in mechanical goods is 48 per cent, and in clothing, 51 per cent. Furthermore, although electronics seems to be one of the hardest hit industries of the economy at present, its entrepreneurs feel they are proportionately less affected by the recession, inflation taxes and bureaucratic difficulties. Only 60 per cent of them say that they experience this type of problem, compared to 74 per cent in clothing, and 93 per cent in mechanical goods (Table II.20, Annex A).

Those entrepreneurs who admit to a lack of information or knowledge, most frequently specified this problem as being in technical areas (related to their respective fields), as well as in business administration and finance. Entrepreneurs in mechanical goods and electronics also cite marketing more often than entrepreneurs in clothing; possibly because those in clothing have more professional experience in this area.

Entrepreneurs think it will be difficult to overcome their limitations. Although they admit there are ways in which they can improve their education - such as courses, vocational training, books - the majority declare they have "no time" or are "too old" to study.

Solutions to their problems and outside help are relatively unknown or not sought. Almost 80 per cent of the entrepreneurs have never applied to any government agency for the support of small businesses. Most of them do not believe in the effectiveness of this kind of support, and a smaller group (24 per cent) are simply unaware of its existence. Only five of the 22 entrepreneurs who did ask for assistance from these government agencies declare themselves satisfied with the results (Table II.21, Annex A). In fact, the more educated entrepreneurs seem more aware of the mechanisms specifically designed to assist them. Thus, the electronics group are the most well-informed about these support agencies and the programmes they offer, even though few of them have actually applied for help.

Almost all of the entrepreneurs say they have heard about SENAI, but few (only 17 per cent) have applied to it for training or assistance purposes, and fewer still (10 per cent) declare themselves satisfied with the services it offers. More than 80 per cent of them have never applied to SENAI, however, mainly because they are not familiar with the kind of assistance it has to offer. Also, among those who declare they have never applied, over one third actually entertain close ties with the institution. That is, either their company has maintained or continues to maintain trainees at SENAI, or else the entrepreneur himself has been to a SENAI school (two entrepreneurs in electronics, and five in mechanical goods have attended classes there) (Table II.21, Annex A).

These data confirm the impression we had throughout the survey that most of the entrepreneurs feel they are well-prepared and qualified to carry out their job. A good many of those who say they have some problems, seem to say so out of modesty's sake rather than because they actually think so. Their most serious problems are not directly related to their business, and therefore cannot be resolved through professional improvement. In fact, in their opinion, the only solution lies in a change in the government's eeconomic policy.

6.3 Past professional experience

Analysing past professional experience is important because it makes it possible to identify the factors that helped the entrepreneur begin his career. Such factors might be: technical know-how, management capabilities, important contacts, initial capital.

In fact, the majority of those interviewed became entrepreneurs after long experience as "employees". Of 98 entrepreneurs, 91 began work at 15 years of age on average, and continued working for another 15 years and had three jobs(1) before reaching their current position (Table II.22, Annex A).

Only seven people actually began their career as entrepreneurs, and are therefore not discussed in this section. Four of them are in the electronics sector, two are in clothing, and one in mechanical goods. This confirms that entrepreneurs in electronics belong to a relatively privileged group from a social standpoint, as 13 per cent of them were able to start off professionally as "employers".

Two aspects of the past experience of those who at some time worked as "employees" in another company is

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1. In this study, a "job" - or employment - is defined as any regular work situation, with set hours and well-defined duties, carried out in a company, family enterprise, or independently. An "occupation", on the other hand, is tne activity carried out for the longest time in each "job", and it was used to determine professional status.

discussed below: their first job, and the one which, in their opinion, contributed the most to launching them as entrepreneurs.(1)

6.3.1 The first job (Table 6.4)

Ninety heads of firms answered this question (excluding the seven who started off as entrepreneurs and one person who refused to answer), 21 of whom declared that their first job had been important to their career as entrepreneurs (12 of them had had only this one job). They are discussed again under heading number 6.3.2.

In Brazil, the very first job is often neither a significant, nor decisive professional experience. This is because the majority of the population start work at a very early age, after having completed only a minimum amount of schooling, and therefore no definite decisions can be made concerning the future. Some continue to study whilst working and change jobs afterwards. Compulsory military service for males at the age of 18 also reduces the importance of the jobs held prior to this age. A whole range of manual and unskilled jobs awaits teenagers who enter the labour market, such as office-boy, behind-the-counter salesman, typist and general office clerk. The entrepreneurs in our sample were really no exception, the above being the most often mentioned first jobs. Mechanical goods entrepreneurs, however, were an exception to the rule, as most of them entered the labour market with the intention of remaining in the field of mechanics. They generally started off as apprentices, general office clerks, or skilled workers and, as we shall

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1. We also analysed the data concerning the job that was held for the longest time. We observed, however, that the majority of the 79 subjects who have held more than one job think that their most important one coincided with the one that they had held for the longest time. In some cases, it also coincided with their first job. Therefore, in order to avoid repetition, we decided to present only the two jobs mentioned above.

Table 6.4

Entrepreneurs: Characteristics of the first job

(in %)

	Characteristics of the first job	Total	Sector		
			Clothing	Electronics	Mechanical Goods
Occupational status	01-02	13.3	10.8	3.8	26.0
	03-04	32.3	43.2	26.9	22.2
	05-06	31.0	27.0	30.9	37.0
	07-09	15.6	16.2	23.0	7.4
	10-12	7.8	2.8	15.4	7.4
	Total (100 %)	90	37	26	27
	Average status	5	5	6	5
Sector of activity	Industrial sector	54.4	51.4	34.6	77.8
	- Mechanical goods and related fields	20.0	2.8	15.4	48.1
	- Electronics and related fields	4.4	-	15.4	-
	- Clothing/textiles	18.9	37.8	-	11.1
	- Other	11.1	10.8	3.8	18.6
	Tertiary sector	45.5	48.6	65.4	22.2
	- Services	14.4	5.4	30.8	11.1
	- Commerce	24.4	32.4	27.0	11.1
	- Public administration	6.7	10.8	7.6	-
	Total (100 %)	90	37	26	27
Company size	Micro (0-4 employees)	17.8	21.6	11.5	18.5
	Small (5-99)	37.8	29.8	30.8	55.6
	Medium (100-499)	17.8	16.2	26.9	11.1
	Large (500 or more)	14.4	10.8	23.1	11.1
	Does not apply (was not a company)	12.2	21.6	7.7	3.7
	Total (100 %)	90	37	26	27
Employment status	Employee	72.5	63.9	87.5	70.3
	Relative of the owner - in this or in another company	19.5	19.4	12.5	26.0
	Self-employed	8.0	16.7	-	3.7
	Total (100 %)	87	36	24	27
Average duration of the first job (in months)		65	71	62	61

see later on, many of them began working in companies owned by their father or by some other relative.

Consequently, approximately 45 per cent of the group that we interviewed started at the lower end of the status scale (1 to 4), corresponding to manual or semi-skilled jobs. Thirty-one per cent were at levels 5 and 6 (skilled jobs), and 24 per cent were in a higher placed job. This classification is based on the occupation that the entrepreneur held for the longest time, and not on his initial situation within the company, which would have lowered the average status level of the first job. As most people stayed in their first job for an average of five years, they probably had the opportunity during that time to progress in relation to their initial position in the firm.

More than half of the group started off in the industrial sector (54 per cent) in micro companies (56 per cent) where they actually worked as employees. But there are differences according to the sector of activity:

- Entrepreneurs in electronics usually started off in medium or large-scale companies (50 per cent) in the area of trade and services (65 per cent). Their average status was higher, which is consistent with their better social background - starting in "white-collar" jobs was more prestigious and probably also increased their chances of continuing their education.
- Inversely, those in mechanical goods usually started off in industry (78 per cent), in the same industry, or in a related area. Twenty-six per cent started off in a company owned by a member of the family. This is an important aspect of the group's background: they learnt their trade on the job.
- Those in clothing are divided almost equally between those who started work in the industrial sector (where they usually worked in the same area or in a related one) and those who started off in the area of trade and services (usually in commerce). Almost one fifth of the group started off in a company owned by a member of

the family. Seventeen per cent started off as self-employed, in jobs ranging from street-hawker to sales representative, selling items usually related to clothing. Thus, 21 per cent of the group did not start off employed by a specific company.

6.3.2 The most important job (Table 6.5)

Eighty of the 91 entrepreneurs who did not start off as head of firm said that their past professional experience was an important factor in helping them become an entrepreneur. For the majority, the most positive contribution had been experience in a job that enabled them to acquire the necessary skills and knowledge in the administrative, managerial, commercial and technological field. The kind of job they spoke of had lasted seven years on average, and it was generally the one they had held prior to becoming entrepreneurs.

The importance of this job is revealed by the large number of entrepreneurs who worked in the industrial sector, usually in the same sector as their present one or in a related area. This type of experience was frequent in the mechanical goods sector, but less so in clothing, where commerce and services were the most significant areas of previous activity.

Furthermore, although most of the group have at some point been "employees", 25 per cent held this position in a company owned by their father, or by some other relative.

The type of occupation performed seems to have been more important than the employment status (Table 6.6). A large number of the group was located in levels 6 to 8, in jobs ranging from skilled industrial occupations, to technical positions in the supervising and management of small and large-sized companies. All of these positions were potentially useful in acquiring professional experience.

Differences may be noted between the sectors in this respect:

- in clothing, most of the group (68 per cent) was located between levels 6 and 8, as seamstresses or tailors, clothes designers, head of a ready-to-wear clothes department, head of a sales department, travelling salesmen, small industrial or commercial company managers;

- in electronics, 52 per cent were located between levels 7 and 8 indicating a frequency in technical jobs and management positions;
- in mechanical goods, 52 per cent were located at level 6 because a large number of jobs involved industrial skills, such as milling machinist, tool-maker and lathe turner.

The transition from this sort of job to that of small entrepreneur did not always lead to a rise in occupational prestige. According to SENAI classification, 23 per cent of the entrepreneurs - for the most part in electronics - were already at an identical level at the time of their most important job (status level 10), since they were already in high level positions of command and management within the company.

With respect to the size of the company in which entrepreneurs started off, we find, as already mentioned, that those in mechanical goods and clothing usually learnt their profession working in "micro" and small-sized companies; whereas those in electronics did so in medium and large-sized companies.

In short, it may be said that past professional experience was an important part of the entrepreneurs' training. Almost all - including those who said that none of their previous jobs had been meaningful - have had the opportunity of holding jobs that were typical of the sector in which they were later to own a company. They also held managerial and supervisory positions that must have provided useful leadership and decision-making experience later on.

6.4 The entrepreneurial experience

A look at entrepreneurial experience reveals how that position was reached, how it was kept, as well as performance levels. These observations are useful at a time when self-employment and company creation are held to be a possible solution to the economic crisis and

Table 6.5

Entrepreneurs: Description of the most important job

(in %)

	Breakdown	Total	Sector		
			Clothing	Electronics	Mechanical Goods
Occupational status	3-4	8.7	20.6	-	-
	6	26.3	20.6	12.0	52.4
	7-8	42.5	47.0	52.0	23.8
	10	3.7	3.0	4.0	4.8
	11-14	18.8	8.8	32.0	19.0
	Total (100 %)	80	34	25	21
	Average status	8	7	9	8
Work conditions	Employee/wage earner	62.5	47.0	76.0	71.4
	Employee in this company	2.5	-	4.0	4.8
	Relative of owner working in this company	12.5	8.8	12.0	19.0
	Relative of owner at another company	12.5	23.5	4.0	4.8
	Self employed	10.0	20.7	4.0	-
	Total (100 %)	80	34	25	21
Sector of activity and industry	Industrial sector	76.3	64.7	76.0	95.3
	Mechanics and/or related field (1)	27.6	2.9	16.0	81.0
	Electronics and/or related field (2)	16.2	-	48.0	4.7
	Clothing/textiles	23.7	55.9	-	-
	Other industries	8.8	5.9	12.0	9.6
	Tertiary sector	23.7	35.3	24.0	4.7
	- services	7.5	8.8	12.0	-
	- commerce	15.0	26.5	8.0	4.7
	- administration	1.2	-	4.0	-
	Total (100 %)	80	34	25	21
Company size	Micro (0-4 employees)	10.0	20.6	4.0	-
	Small (5-99)	37.6	32.4	28.0	57.1
	Medium (100-499)	18.7	14.7	16.0	28.6
	Large (500 or more)	26.2	17.6	48.0	14.3
	Does not apply (was not a company)	7.5	14.7	4.0	-
	Total (100 %)	80	34	25	21
Time worked (in months)	up to 12	11.2	11.8	8.0	14.4
	13-24	6.2	2.9	16.0	-
	25-36	15.0	14.7	8.0	23.8
	27-60	18.8	26.5	16.0	9.5
	61-120	27.6	29.4	28.0	23.8
	121-180	15.0	8.8	20.0	19.0
	181 or more	6.2	5.9	4.0	9.5
	Total (100 %)	80	34	25	21
	Average time (in months)	80	78	77	86
This job was important in acquiring	Commercial, management and administrative know-how	20.0	29.4	16.0	9.5
	Technological know-how	28.7	14.7	44.0	33.3
	General knowledge	37.6	35.3	32.0	47.7
	Other (contacts, capital)	13.7	20.6	8.0	9.5
	Total (100 %)	80	34	25	21

(1) Mechanics, metallurgy and transportation equipment
(2) Electric and communications equipment

unemployment.

6.4.1 The beginning of a career (Table 6.7)

People became entrepreneurs in three different ways:

- some set up or organised their own company (58 per cent). This occurred in all three sectors, particularly in clothing (72 per cent);
- some inherited a family business or pursued family interests (25 per cent), particularly in mechanical goods; and
- others became associates in existing small and medium-sized companies (17 per cent), especially in electronics (21 per cent).

A little over one third of the group (35 per cent) said they received paternal help in setting themselves up. This third consists mainly of people who had inherited the family business. A smaller percentage (20 per cent) said they had received help from another family member.

The fact that most of their parents were either self-employed or had owned their own business is also a very important factor. In some way, it influenced their set of values and ambitions, encouraging them to go beyond the position of employee in which most of them had started out. In their personal statements, many of the entrepreneurs said they had reached their present position because they were "not cut out to be employees", or were "not suited to working under someone else".

A large majority (84 per cent) said that their initial capital had come from their own pocket, from money earned in a previous job (in the form of subsidies, compensation funds, etc...) or from the sale of their personal belongings (cars, real-estate).

The few (9 per cent) who began with loans usually got them from friends or relatives. Only two interviewees - one in clothing and one in electronics - acquired their capital from other sources (personal loan from a bank, in the first case and a special credit facility designed for small entrepreneurs, in the second). An even smaller percentage (7 per cent) began with no capital at all, having "paid" for their share of the company with their

Table 6.6

Entrepreneurs: Occupations during the most important job

Status	Clothing	Electronics	Mechanical Goods
03	Hawker/pedlar/shop assistant (2) Assistant tailor (1)	-	-
04	Independent salesman (1) Soldier (1)	-	-
06	Seamstress/tailor (2) Patternmaker (1) Buyer (2) Maintenance mechanic (1) Interviewer (1)	Electric and electronic-salesman (1) Electronic equipment-repairman (1) X-ray machine rigger (1)	Toolmaker (3) Milling machinist/toolmaker(2) Turner (3) Painter-letterer (1) Assistant production-technician (1) Joiner (1)
07	Ready-to-wear craftsman (2) Seller/independent-representative (3) Head of sales department (1)	Head of transformers-department (1) Master-turner (1)	Master-toolmaker (1)
08	Administrative manager/commercial/production (10)	Administrative manager/commercial (3) Electronics technician (3) Accountant technician (1) Programming technician (1) Publicity designer (1) Laboratory technician (1) Technical salesman-telephone equipment-salesman (1)	Administrative manager/commercial/production (3) Accountant technician (1)
10	Industrial manager (1)	Administrative manager (1)	Industrial manager (1)
11	-	Head of the technical department (1) Teacher (1) Head of costs section (1)	Engineer (2) Management assistant (1)
12	Manager (1)	Manager (3) Engineer in charge of production (1)	Manager (1)
14	Manager/managing director (2)	Manager (1)	-

OBSs a) The numbers in parenthesis indicate how frequently each occupation occurs.

b) The status of owners and managers varies according to company size: while the status of other professionals varies according to occupational levels - assistant, holder of a given office, head of a section, etc. (see scale, Annex F).

work, using capital that they had the right to withdraw as partners in the company.

Very few started off on their own. Eighty-eight per cent began with partners - usually one or two relatives (wife/children/brothers) and/or friends, including former business associates. In the case of partnerships with relatives, such as wife or child, participation could be purely nominal, merely to comply with legal technicalities.

6.4.2 Previously-owned companies, and companies that were purchased later on (Tables II.23 and II.24, Annex A)

Over two-thirds of the group started off with the same company that they owned at the time of the survey. Thus only thirty have had another company before the one they own now. Those in mechanical goods have generally had two other companies, and the rest, only one other one.

Almost all have only owned small-sized companies located in the state capital or within the metropolitan area, or at the very farthest within state boundaries. Although most of the group have only worked in their present or in a related sector, about one-third - 60 per cent in the mechanical goods area - have owned companies in other sectors, including trade and services.

Twenty-one of these thirty entrepreneurs went bankrupt and/or had to close down at least one of the companies they had owned previously. Seven simply gave up their share of the company, and, therefore, only five of the entrepreneurs that we interviewed are still partners in a company that they founded prior to the one owned at the time of the survey.

Twenty-six entrepreneurs bought a share in another company at a later date; 11 in clothing, 10 in electronics, and five in mechanical goods. In fact, 32 entrepreneurs bought shares in another company after becoming involved in the one referred to in this study, but a small number either closed down, or gave up their share of the company.

Half of the group owning another company do so in a branch that is unrelated to their present company; 39 per cent are in the same sector, and 11 per cent have shares

Table 6.7

Entrepreneurs: The beginning of their career as entrepreneurs

	Breakdown	Total	Sector		
			Clothing	Electronics	Mechanical Goods
Paternal influence or help	None	65.3	69.2	60.0	65.5
	Some	34.7	30.8	40.0	34.5
	Entrepreneur in same or related industry	23.5	20.5	20.0	31.0
	Entrepreneur in another industry	6.1	7.7	10.0	-
	Worked in same or related industry	4.1	2.6	6.7	3.5
	Other	1.0	-	3.3	-
	Total (100 %)	98	39	30	29
Influence or help from another relative(s)	None	80.4	79.0	83.3	79.4
	Some	19.6	21.0	16.7	20.6
	Entrepreneur in same or related industry	9.3	5.3	13.4	10.4
	Entrepreneur in another industry	6.2	10.5	3.3	3.4
	Worked in same or related industry	3.1	5.2	-	3.4
	Other	1.0	-	-	3.4
	Total (100 %)	98	39	30	29
How he started out	Inherited/continued family business	24.5	18.0	23.3	34.5
	Set up his own company	58.2	71.7	50.0	48.3
	Became an associate in a small/ medium company	17.3	10.3	26.7	17.2
	Total (100 %)	98	39	30	29
Where the initial capital came from	Private means	83.8	90.6	78.3	79.0
	Loan	9.5	9.4	8.7	10.5
	Payed for his share with company profits	6.7	-	13.0	10.5
	Total (100 %)	74	32	23	19
Company in which he started out	This one	69.4	61.5	66.7	82.8
	Another one	30.6	38.5	33.3	17.2
	Total (100 %)	98	39	30	29
Partners	Had none	12.2	20.5	3.3	10.4
	Had:	87.8	79.5	96.7	89.6
	- 1 partner	52.0	61.6	53.4	38.0
	- 2 partners	24.5	12.8	23.3	41.3
	- 3 partners	8.2	5.1	10.0	10.3
	- 4 partners	3.1	-	10.0	-
	Total (100 %)	98	39	30	29
Previous relationship with partner	Relative/friend	57.1	74.2	41.4	54.2
	Relative/friend and business associate	23.8	12.9	31.0	29.2
	Business associate	19.1	12.9	27.6	16.6
	Total (100 %)	84	31	29	24

(1) Excluding those who inherited or continued a family business

in both companies. Most of them (69 per cent) are involved in only one other company, and the rest are involved in two others. There are only two cases of entrepreneurs with interests divided between three or more companies.

This information reveals an important aspect of the strategy of small entrepreneurs: whenever possible, they diversify instead of expanding. The data on the companies that they own at present, for example, show that although practically all of the companies have expanded since their foundation, very few have crossed the limit that conventionally separates small from medium-sized companies. When this transition has occurred, it has usually been the result of an improvement in the overall economic cycle.(1)

6.4.3 The present company (Table 6.8)

The interviewees' position in the firm tends to reflect the criteria that have singled them out for selection. That is, either the most senior partners, or those with the widest range of responsibilities were chosen for the interviews.

As a result, most of the people interviewed are in charge of the commercial and/or administrative areas of their companies (48 per cent); they are the ones who come into contact with the public - including researchers. Company partners in technically-oriented areas, such as production, have less contact with the public as they tend to specialise in one specific area.

In fact, entrepreneurs in production account for only 15 per cent of the businessmen interviewed. A much larger percentage belong to an "eclectic" sort of group

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1. It is a fact that our sample does not include those companies classified "small" in 1981 and which became "medium-sized" in 1983; however, only six of the 195 companies selected at random for this study happen to fall within this category, and all six were already close to the 99 employee limit in 1981.

Table 6.8

Entrepreneurs: Their present position in the company

(in %)

	Breakdown	Total	Sector		
			Clothing	Electronics	Mechanical Goods
Changes in partners	None	49.0	59.0	33.3	51.7
	Some occurred	51.0	41.0	66.7	48.3
	- different person	45.9	33.3	66.7	41.4
	- other (decrease, increase)	5.1	7.7	-	6.9
	Total (100 %)	98	39	30	29
Number of partners besides the one who was interviewed	No other	6.1	7.7	-	10.3
	1 other	48.0	59.0	46.7	34.5
	2 others	29.6	25.6	26.7	38.0
	3 others	9.2	5.1	13.3	10.3
	4 or more others	7.1	2.6	13.3	6.9
	Total (100 %)	98	39	30	29
Previous ties with partner(s)	Family/friend	69.6	83.3	56.7	65.4
	Family/friend/professional	21.7	16.7	30.0	19.2
	Professional	8.7	-	13.3	15.4
	Total (100 %)	92	36	30	26
Majority holding	Has	31.5	22.2	36.7	38.5
	Does not have	68.5	77.8	63.3	61.5
	Total (100 %)	92	36	30	26
Participation percentages	0 per cent	4.3	2.8	6.7	3.8
	1-10 per cent	7.6	-	13.3	11.5
	11-20 per cent	5.4	2.8	10.0	3.8
	21-30 per cent	8.7	5.6	13.3	7.7
	31-40 per cent	15.2	19.4	6.7	19.2
	41-50 per cent	31.6	47.2	13.3	30.8
	51-90 per cent	19.6	13.9	30.0	15.4
	91-99 per cent	7.6	8.3	6.7	7.7
	Total (100 %)	92	36	30	26
	Average participation	50	52	45	45
Number of hours of work per week in this company	Up to 14	2.0	2.6	3.3	-
	15-29	4.1	7.7	3.3	-
	30-39	8.1	10.2	10.0	3.4
	40-48	28.6	18.0	50.0	20.6
	49-59	28.6	23.0	26.7	38.0
	60 or more	28.6	38.5	6.7	38.0
	Total (100 %)	98	39	30	29
	Average (in hours)	49	49	45	54
Main field of activity within the company	Administration	16.3	18.0	16.7	13.8
	Marketing	10.2	10.2	16.7	3.4
	Administration/marketing	21.4	20.5	20.0	24.1
	Subtotal	47.9	48.7	53.4	41.3
	Production	15.3	23.1	13.3	7.0
	Several/all	36.8	28.2	33.3	51.7
	Total (100 %)	98	39	30	29

with wide-ranging responsibilities in virtually every area of the company. Overall percentages for this latter group reach 37 per cent, and even 52 per cent among the entrepreneurs in mechanical goods.

The entrepreneurs interviewed are extremely involved in the company's activities, and this is partly illustrated by the amount of time they put into their work: an average of 49 hours per week. Over half of them - the percentage in mechanical goods is 72 per cent - work even longer hours. Comparatively speaking, these entrepreneurs tend to work more than their own employees, and even more than the majority of employers in the metropolitan area. Only 14 per cent work less than 40 hours a week in the firm. This means that other activities occupy second place in their working life, or else they participate in other activities in name only. This is probably the case of most entrepreneurs going into other companies. Only seven of the managers/owners interviewed have another job or a wage-earning activity, and only one has actually left his job temporarily as an entrepreneur to go back to being an employee.

Only a minority - 22 per cent in mechanical goods and 37 per cent in electronics - control more than half of the company's capital; and four entrepreneurs actually "own" the company without working in it. This shows that the amount of shares owned does not accurately reflect the power and decision-making structure in a small company.

There are only five cases of individually-owned companies. The rest are usually controlled by one or several other partners (relatives and/or friends). Only three companies (two in electronics and one in mechanical goods) include a legal entity among their owners.

About half of the group said that a change in the composition of partners has taken place since they first entered the company - on average, ten years ago. These changes were limited to substituting one person for another. Few changes of actual increase or reduction in the initial number of partners within the company have occurred.

Few entrepreneurs are worried about problems of succession, perhaps because most of them are relatively young. About 70 per cent declare they have not yet given the problem much thought. Among those who have thought the matter over, it is commonly expected that their son will eventually take their place within the company. They also think that the best way to prepare him for this is by combining theory and practice, that is by having him work part-time, and simultaneously pursuing a university degree - usually in business administration, economics or law.

CHAPTER VII

EMPLOYEES' PROFILE

The employees profile reflects the criteria used for selecting our sample and the conditions under which our survey took place. In deciding to select the companies' skilled personnel for our study, it was likely that the employees included in our sample would be the most experienced, oldest and/or most senior members of the company.

Furthermore, as mentioned previously, it was impossible to avoid interference from entrepreneurs who wanted to single out personally the employees to be interviewed. This process of selection therefore probably excluded "problematic" employees, particularly those whose working papers were not in order. That is probably why almost all of those interviewed did have their papers in order and did not work longer than the official number of hours allowed per week.

As stated in Chapter 4, compared to the companies' real occupational structures occupations at the highest level are over-represented in the sample. Because of the companies' structure, too, not all types of occupations are found in all three sectors or strata:

- the engineers (level 8) are found only in the electronics sector, in companies with 20 or more employees (Strata 2 and 3);
- clothing employs only practical technicians (and no secondary-school trained technicians).

The sample included 278 employees from several occupational levels:

	Occupational level	No.	%
2 -	semi-skilled worker	53	19
3 -	head of section/supervisor of semi-skilled workers	24	9
4 -	skilled worker	113	41
5 -	foreman/craftsman	45	16
6/7 -	middle-level technician	36	13
	6 - practical technician	13	5
	7 - secondary-school trained technician	23	8
8 -	engineer	7	2

Employees were asked several questions regarding their personal data, their educational and training background, their professional history and finally their present working conditions.

7.1 Socio-economic characteristics

7.1.1 Sex (Table II.26, Annex A)

The 175 men interviewed represent 63 per cent of the sample and the 103 women, 37 per cent. The proportion of women interviewed is therefore smaller than the proportion of women employed in companies as a whole (52 per cent). The difference is even more marked in electronics, where women form 44 per cent of the personnel in production, but only 23 per cent of our sample. In clothing, the proportion of women employed (82 per cent) is practically the same as in our sample (78 per cent). A similar proportion is found in mechanical goods - 3 per cent in companies in general, and 2 per cent in the sample.

This under-representation of women in our sample is probably due to the fact that they are usually employed at the lower end of the occupational scale, and therefore are not included in our survey. In the 100 companies visited, there is not one woman in the higher occupational levels; they constitute only 5 per cent of the intermediate-level technicians in the sample, but form 60 per cent of the semi-skilled employees.

Most of the women in the sample are at the semi-skilled (2), skilled (3) and supervisory levels (3). The only exception is in the clothing sector where women constitute the majority at all levels, except technical. In fact, there are only three women in the clothing sector at technical level. In mechanical goods there are only two women in the whole sample (one skilled and one semi-skilled). In electronics, women are semi-skilled workers and/or supervisors; in addition, two women technicians in this sector are included in our sample, corresponding proportionately to the number of women in the firms at that level.

7.1.2 Age (Table II.27, Annex A)

Younger workers were obviously excluded from our sample because we favoured the more qualified employees. As we all know, time is a key element of successful training. This bias becomes apparent when comparing the people we interviewed with employees in the Greater São Paulo area.

Age group	Employees interviewed (%)	Employees in the Greater São Paulo manufacturing industry (PNAD - 76) (%)
Under 20	6	20
20-29	74	61
40 or more	20	19

The average age of the group interviewed is 32 years, with practically no difference from one sector to another, although there are differences according to the occupational level. This confirms our initial hypothesis. Foremen and supervisors are in the oldest age-group (37-42 years). They have usually obtained their job through promotion after many years of experience. Technicians who have received on-the-job training are older than those trained in schools. One of the advantages of an education is that it accelerates career advancement, enabling employees to join firms at a higher level.

7.1.3 Geographic background (Table II.28, Annex A)

Most employees (62 per cent) were born in the state of São Paulo, but only one-third come from the metropolitan area. A large proportion (34 per cent) were born in other states, representing a much larger proportion of interstate migrants than actually exists in the state population (25 per cent). Backgrounds are the same in both cases, however; most migrant workers come from the North-East (18 per cent) and South-East (9 per cent) of Brazil, usually from Pernambuco, Bahia and Minas Gerais. These states traditionally supply São Paulo's migrant work force. Only 3 per cent of the employees in the sample were born in other countries - mainly in Japan and Italy. Percentages are the same from one sector to another.

The proportion of inter-state migrants and their offspring is larger in the lower occupational levels (semi-skilled workers and their supervisors). Inversely, most of the people in technical and higher level occupations (6, 7 and 8) come originally from the state of São Paulo itself. A significant proportion of children of foreigners is also found in these levels. See table below:

Place of birth	Interviewees' occupational level			
	2 and 3	4 and 5	6, 7 and 8	Total
	%	%	%	%
Interviewees from				
- São Paulo	47	65	79	62
- Another state	51	31	19	35
- Another country	2	4	2	3
Parents from				
- São Paulo	34	47	50	44
- Another state	58	40	25	43
- Another country	8	13	25	13
Total (n = 100 %)	77	158	43	278

A number of studies have already demonstrated that migration from lesser developed to more advanced areas supplies manpower for lower-level occupations: these occupations, generally rejected by the native population, are filled by migrants. A typical example is the case of the construction worker in São Paulo, who usually comes from the North-East of Brazil. On the other hand, migrants from more advanced areas - as in the case of foreigners - obtain the best jobs for themselves and their children. In short, the migrant worker's place of origin - combined with additional differences in education, health and income - has a considerable impact on the type of job he/she gets in the place in which he/she settled down.

7.1.4 Social background (Table II.29, Annex A)

We used the parents' education, sector of activity and occupational status to determine the employees' social background. There are significant differences from one occupational level to another. On the whole, though there is a certain homogeneity in the social background of employees at worker level (2 to 5). Compared to technicians (levels 6 to 8), they are of course from a much lower social background and

- include a larger proportion of migrants and children of migrants from lesser developed parts of the country;
- have parents who worked in rural activities and/or low prestige jobs;
- have parents with little formal education.

With respect to the above, the "workers" interviewed have a lot in common with industrial workers in general, as well as with SENAI-SP night-school students (formerly called CQP-I).(1)

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1. For comparative purposes we shall compare our sample of employees to former SENAI students because the latter are a good example of the industrial work force in its widest sense, coming as they do from all types of industry (especially from the machinery and mechanical goods industries), and from companies of every size, from all over the state of São Paulo. The SENAI-SP (CQP-I) study was conducted in 1982 on graduates of the 1979 class who had been trained as turners and fitters. At the time of the survey most of them held skilled and semi-skilled jobs, although few of these were related to the profession they had learned at SENAI. They were 26 years old on average, and had been working for about 8 years. For the description of the research on CQP-I, see Chapter III above, para. 3.5.2.

Technicians, on the other hand - and engineers even more so - have more in common with entrepreneurs in terms of social background.

Below are some specific comments on the parents of employees.

(a) Parents' sector of activity

Forty per cent of the interviewees are sons of industrial workers - based on the occupation their parents held for the longest time, usually in the area of construction work or mechanical goods; 34 per cent are sons of rural workers, and 26 per cent are sons of workers in the area of trade and services.

The proportion of parents in the agricultural sector is rather high if one considers that only 13 per cent of the state's work force is in this sector at the present time. It is also high compared to SENAI-SP night-school students - 14 per cent of whom were sons of rural workers, 42 per cent of workers in trade and services, and 44 per cent of workers in the industrial sector in 1979.

Differences occur from one sector to another. In clothing and in mechanical goods, there is a larger proportion of sons of rural workers; but most of the parents of employees in electronics worked in the industrial sector, or in the area of trade and services, as shown in the table below:

Interviewees' Sector	Parents' sector of activity			
	Agricultural %	Industrial %	Trade and Services %	Total (n = 100%)
Clothing	42	38	20	99
Electronics	21	44	35	87
Mechanical goods	40	40	20	86
Total	34	40	26	272

Differences in the father's background according to the son's occupational level also occur. There are few sons of rural workers among technicians and engineers, but a significant number of them among blue-collar and manual workers. See figures below:

Interviewees' Occupational level	Parents' sector of activity			
	Agricultural %	Industrial %	Trade and Services %	Total (n = 100%)
2-5 Blue-collar workers	39	39	22	229
6-8 Technicians and engineers	9	47	44	43
Total	34	40	26	272

(b) Fathers' occupational status

Most of the parents (85 per cent) did not go beyond level 6 of the occupational scale we adopted (Annex F). They were mostly in low prestige, manual jobs, working as unskilled, semi-skilled, or skilled labourers in the different economic sectors. Some of the most common jobs they held were those of: farm labourer, unsecured small-holder, small independent land-owner, stone-mason, carpenter, hawker, driver, machinist.

The parents' average status level was 4, much lower than the average status level of the parents of entrepreneurs, but equal to the average for SENAI-SP night-school students, which seems to indicate that this type of social background is characteristic of the state's industrial work force.

Differences in occupational status from one sector to another are slight, although in electronics the parents' average status level is slightly higher, reaching level 5 of the scale. The difference in the electronics group occurs certainly because of the greater number of technicians and engineers in the sector, whose parents were obviously located at higher levels on the occupational scale. The average paternal status for blue collar workers (levels 2 to 5) is level 3, while for technicians it is 6, and for engineers, 7. The paternal status level of engineers is therefore similar to the paternal status level of entrepreneurs. These results are not surprising, as the selective aspects of the educational system are well-known. Consequently, access to secondary schools and universities is limited to the few who can afford to pay for the direct and indirect cost of education. This appears to be the case of the engineers and technicians in this sample. Their parents were for the most part small rural and urban property owners, technicians or people in higher-level occupations, executives, foremen of skilled industrial workers or supervisors of workers in the area of trade and services.

(c) The fathers' educational level

The fathers' level of education, like their social background, was poor, particularly if comparison is made with the educational profile of the male population, aged 50 to 69 in the Greater São Paulo area. See figures below:

Educational background	Parents of interviewees	Men between 50 and 69 from the Greater São Paulo area (PNAD-76)
	%	%
Had no schooling	30	18
Did not complete primary school (less than 4 years of schooling)	19	23
Completed primary school (4 years of schooling)	37	32
Went beyond primary school (5 years or more of schooling)	14	27
	(100)	(100)

Parents of employees in the electronics branch, as is the case for the parents of entrepreneurs, went to school for a relatively longer time. Twenty-three per cent of them went beyond the primary school level, whereas in clothing and mechanical goods, the percentages are 10 per cent and 9 per cent respectively. The parents of employees in clothing received the least amount of schooling. Sixty per cent of them barely completed primary school, whereas at least 45 per cent of the parents of employees in mechanical goods and in electronics did so.

These discrepancies are directly associated with the difference in employees' occupational structure by sector. There are more technicians and engineers in the electronics sample who come from a better social background - as far as their parents' occupational status and educational background is concerned - than blue collar workers.

In fact, the educational level of fathers of technicians and engineers (levels 6 to 8) is very similar to that of entrepreneurs (Chapter VI). The educational level of fathers of blue collar workers (levels 2 to 5), is closer to that of SENAI adult night-school trainees. See figures below:

Educational background	Parents of interviewees from levels 2-5 (blue collar workers)	Parents of CQP-I graduates (1)
	%	%
Had no schooling	34	24
Did not complete primary school	21	34
Completed primary school	36	35
Went beyond primary school	9	7

(1) Source SENAI-SP 1982 Op. cit.

7.2 Employee's educational level and vocational training

7.2.1 Educational background (Table 7.1)

Most companies said they do not take an applicant's educational background into account when selecting him but, in fact, practically all employees have at least completed primary school - that is, four years of schooling. Only 11 per cent of those interviewed did not finish their primary school education; they are all in levels 2 to 5 and mainly employed in the clothing

Table 7.1

Employees' educational level according to sectors and occupation

Educational Level	Total	Sector			Occupational level					
		Clothing	Electronics	Mechanical Goods	Semi-skilled 2	Supervisor of semi-skilled 3	Skilled 4	Foreman 5	Technician 6 and 7	Engineer 8
Incomplete primary school(*)	9.4	14.6	4.7	7.9	24.6	-	8.0	8.0	-	-
Complete primary school (4th year first degree education)	30.9	38.8	19.5	33.0	30.2	45.8	36.3	37.8	2.8	-
Incomplete junior hi[illegible] school (5th to 7th [illegible] first degree education)	19.8	18.4	17.3	23.9	26.4	12.5	21.2	24.4	8.3	-
Complete lower secondary (8th year first degree education)	12.9	14.6	13.8	10.2	11.3	8.3	17.7	11.1	8.3	-
Incomplete general secondary education	6.1	3.9	5.7	9.1	3.8	16.7	8.0	-	5.6	-
Incomplete technical secondary education	2.9	1.0	4.6	3.4	-	8.3	4.4	-	2.8	-
Complete general secondary education	6.1	5.8	7.0	5.7	3.8	-	2.7	11.1	19.4	-
Complete technical secondary education	5.4	-	12.6	4.5	-	-	0.9	4.4	30.6	14.3
Incomplete higher education	3.6	20.0	6.9	2.3	-	8.3	0.9	-	19.4	-
Complete higher education	2.9	1.0	8.0	-	-	-	-	2.2	2.8	85.7
Total (100 %)	278	103	87	88	53	24	113	45	36	7

(*) Includes two people with no formal instruction (1 in clothing and 1 in mechanical goods), both in level 2.

industry. Only two interviewees claimed they had no formal schooling, but that they are nonetheless literate.

A significant correlation is found between the employees' occupational level and the number of years of study (Pearson's Coefficient = 0.57). Blue-collar workers went to school for six years, on average (levels 2 to 5), that is, a little beyond the former primary school, while the average for technicians and engineers rose sharply to 11 and 15 years of schooling, respectively. In other words, technicians and engineers have an educational background that corresponds with the job they hold.

Occupational level	Average number of years of study
2 - Semi-skilled workers	5
3 - Supervisor of semi-skilled workers	7
4 - Skilled workers	6
5 - Foremen	6
6/7 - Technicians	11
8 - Engineers	15

This explains why variations are found in the employees' level of schooling from one sector to another. The electronics sector, which has the largest proportion of interviewees in levels 6 to 8, also has the highest percentage of secondary school and university graduates. On the other hand, the clothing sector, where most of the employees interviewed are blue-collar workers, has the highest percentage of employees who have completed primary school only.

It is interesting to note, however, that about 17 per cent of the skilled and semi-skilled workers have completed more than eight years of study; that is, they have gone beyond the minimum amount of compulsory schooling required since 1971, which could be considered the minimum amount of schooling required for holding such jobs.

As far as technicians are concerned, employees without a secondary education level are found only among the practical technicians (level 6). Those with a diploma (level 7) followed the vocationalised secondary school course or attended the former high school, and also took training courses in their field of work. On the whole, however, the educational background of technicians in levels 6 and 7 is very varied: 28 per cent of them did not complete secondary education, 19 per cent have completed general education, 31 per cent a secondary technical course and 22 per cent went as far as university or finished it.

Sixty-four per cent of the 23 interviewees who went to a secondary technical school received training in electricity and electronics; they worked in the same field at the time of the survey. Fourteen per cent received their training in the field of mechanics and also have a job in that sector; the remaining 22 per cent followed other technical training courses, mainly in an industrial field. Only one interviewee, in clothing, has taken a secretarial training course.

Almost all of the engineers received a higher education with the exception of one interviewee who had only gone as far as a secondary technical school. Our sample includes 18 interviewees with a university degree, 12 of whom are engineers. Of these 18, 10 specialised in the same area in which they work (electronics or mechanics), two others are lawyers, one has a degree in business, and the rest have an arts or science degree.

The variables contributing the most to differences in the employees' educational level are, by order of importance: social background (estimated according to the parents' level of education), age, sex and place of birth.(1) A multiple regression analysis reveals that these four variables account for 39.2 per cent of the variance in the employees' number of years of study. The first variable - the parents' educational level - is the most significant, accounting for 24.8 per cent of the variance. Age accounts for 6.2 per cent of the variance, sex for 4.5 per cent and place of birth for 2.2 per cent.

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1. These variables are significant at a 5 per cent level.

A positive correlation is found between the amount of formal education received by the father, and the amount received by the son: if the father's educational background was good, his son's would be even better. Age has an opposite effect: the younger the group, the better the education they received (20 to 39 years of age). Finally, sex and place of birth prove to be discriminatory factors, favouring males who were born in the state capital or metropolitan area (Table II.30, Annex A).

7.2.2 Vocational training

(a) Learning a job (Table II.31, Annex A)

Two-thirds of those interviewed say they learned their present trade essentially "on-the-job". Seventy-six per cent of those in mechanical goods, 64 per cent of those in electronics, and 60 per cent of those in clothing give the above answer. A further 21 per cent belonging to the clothing industry say they also learned through trial and error, but at home, and not in the company. Their answers are plausible, as most of this group are seamstresses. In mechanical goods and electronics, however, only 1 per cent of those interviewed say they learned their skills "at home".

Almost half of the group examined have had vocational training in the same are as their job, or at least in a related area. Nonetheless, such training courses, whether in schools or in vocational training centres, are considered of secondary importance in learning a profession. Only 23 per cent feel that this type of training has been of the utmost importance - in electronics the proportion is 33 per cent. This higher percentage in the electronics sector is due to the greater proportion of technicians and engineers with a high educational level for whom theoretical book learning, or a formal education, is more important.

In fact, employees could have given three different answers, marked in descending order, to our question "how did you learn your present job?", but only a little over half of the group (52 per cent) include a second answer, and only 12 per cent indicate a third one. Even if we take into account the first and the second answer, practical training, whether within a firm or at home, remains the most important way of learning a job, as it is mentioned by 60 per cent of the interviewees. Courses and vocational training are given secondary importance, mentioned by 36 per cent of the group only.

Taking into account the answers to these questions, interviewees learned their trade as follows:

	Total	Clothing	Electronics	Mechanical Goods
	%	%	%	%
Practical training (at home; in the present or in another company)	70	75	65	68
At school (course work/vocational training)	27	19	32	32
Other	3	6	3	-

(b) Institutions where employees were trained (Table II.32, Annex A)

SENAI's importance among the various institutions where the 135 company employees having undergone vocational training courses were trained, is significant. This result is somewhat surprising considering that the graduates of this institution are supposedly mostly employed by large-sized companies. In fact, significant correlation coefficients are found between:

- the total number of courses completed, and the number of SENAI courses completed (0.65);
- the total duration of courses taken in general, and the number of class hours taken at SENAI (0.46).

Correlation coefficients are even higher where only those courses related to the present job are concerned, in which case SENAI's contribution to the interviewed group's vocational training is undeniably important.

SENAI's impact obviously varies according to the sector and occupational level. SENAI-SP is most active in the mechanical goods branch. This sector employs the largest percentage (72 per cent) of the SENAI-SP graduate students interviewed in our survey. Levels 4 and 5 of the occupational scale, corresponding to skilled personnel, are the levels at which SENAI's training programmes had the greatest impact.

According to the high number of course-hours completed by mechanical goods interviewees (1 300 hours on average), SENAI's contribution occurs mainly in the form of apprenticeship courses. In electronics and clothing, the average number of hours drops to 376 and 114, respectively, which is consistent with the fact that courses in this area are rather short. The exception to this rule occurs in electronics at levels 4 and 5, where the average duration of courses is over 1 000 hours; most of the employees in this category had previously taken mechanics courses to become turners, fitters, and toolmakers.

As far as the interviewees' longest course is concerned, SENAI remains the leading training institution, immediately followed by the so-called private independent schools. Correspondance courses also play a significant role. The impact of each institution, however, varies according to the employees' occupational level, as the summary below reveals:

Interviewees'	Institution at which the longest professional training course was taken				
Level	SENAI	Independent Schools	Technical School	Other	Total
	%	%	%	%	100%
2	17	58	-	25	12
3	25	50	12	13	8
4	60	36	2	2	53
5	50	36	-	14	28
6-7	18	45	28	9	29
8	-	20	40	40	5
Total	43	39	10	9	135

SENAI's impact is felt most in relation to skilled personnel in the area of production (levels 4 and 5), while the importance of independent schools is most evident at the semi-skilled (2 and 3) and technical levels (levels 6 and 7). The influence of public and private technical schools is predictably large in the latter group. Several institutions such as SESI, SENAC, religious institutions, colleges and universities are included under "other" options. Companies are also mentioned in this option, but their importance is negligible, as only two interviewees took a company training course.

Differences also occur from one sector to another. Independent schools are the most important agency of vocational training in clothing and electronics - 50 per cent of interviewees in clothing, and 40 per cent in electronics completed their longest course in this way. SENAI is the next most important vocational training entity - 30 per cent in clothing and 21 per cent in electronics. In mechanical goods, however, SENAI has the greatest impact, as 64 per cent of interviewees in this sector took their longest training course there. Independent education schools rank second with 32 per cent of the interviewees.

In short, judging from the longest course taken by the employees in our sample, SENAI and independent schools more or less share the task of training manpower in the small companies we studied. This is also true in the case of the course most closely related to the interviewees' job.

(c) Characteristics of courses completed by employees (Table 7.2)

It was decided to concentrate on completed courses as only 16 per cent of employees dropped out of courses they had started, and only 4 per cent were still taking a course at the time of the survey.

We basically studied two aspects: the number of courses taken, and their duration (in number of hours completed). We observe that these two aspects are closely linked to the number and duration of courses related to the intervieees' present job.(1) This means that most vocational training courses taken by interviewees were closely related to their professional activities.

About half of the group we interviewed (49 per cent) have had a regular formal education, and also taken some sort of vocational training course. The proportion of employees with this kind of background increases along with a corresponding rise in their occupational level. This is curious, as most companies claimed that training courses are of little or no importance to them in selecting personnel. In practice, though, the higher qualified jobs are generally held by the most well-trained employees.

The proportion of interviewees with no vocational training is only large (73 per cent) at the semi-skilled level where skills can be quickly picked up "on the job". The proportion of skilled workers (levels 4 and 5) with vocational training would actually be larger, were it not for the significant number of seamstresses included in this group. Their trade, although considered to be skilled labour, is often learned through simple observation and on-the-job training.

The largest proportion of people with vocational training (85 per cent) is found at level 6, which indicates a certain desire on the part of practical technicians to compensate for gaps in their formal education. The proportion of employees who complemented the formal education with vocational training is high even among school-trained technicians (level 7) and engineers (level 8) - 78 per cent and 71 per cent, respectively.

Fifty-two per cent of the group completed only one course, 20 per cent completed two, 13 per cent three, and 14 per cent four or more courses. On average, the employees interviewed completed two courses, with no

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1. Pearson's coefficient between the total number of courses and the number of courses related to the present job is 0.93; and between the total number of hours, and hours related to the present job, 0.98.

Table 7.2

Employees: Complete vocational training - according to occupational level

Variables	Occupational level of interviewees	Total	Sector		
			Clothing	Electronics	Mechanical Goods
Proportion of those who completed a course (1)	2	22.6	12.0	33.3	30.0
	3	33.3	38.4	30.0	-
	4	47.8	41.3	46.7	53.9
	5	64.4	81.3	50.0	57.8
	6	84.7	66.7	88.9	100.0
	7	78.2	-	77.8	80.0
	8	71.5	-	71.5	-
	Total	49.2	40.1	55.1	53.5
Average number of hours	2	364	245	278	656
	3	360	226	583	-
	4	1 236	488	1 252	1 740
	5	870	315	1 650	1 171
	6	1 155	530	1 113	2 745
	7	2 385	-	2 273	2 777
	8	1 293	-	1 293	-
	On the whole	1 178	388	1 409	1 647
Proportion of those who completed a course related to their present field of work	2	66.7	66.7	50.0	100.0
	3	75.0	60.0	100.0	-
	4	94.4	89.4	100.0	96.5
	5	96.5	92.4	100.0	100.0
	6	100.0	100.0	100.0	100.0
	7	88.9	-	85.7	100.0
	8	100.0	-	100.0	-
	Total	91.2	85.7	89.5	97.8
Average number of hours related to the present job	2	328	223	217	656
	3	235	70	511	-
	4	1 210	455	1 259	1 710
	5	790	235	1 578	1 089
	6	1 093	457	1 046	2 745
	7	2 145	-	2 164	2 075
	8	1 293	-	1 293	-
	On the whole	1 103	324	1 347	1 550

(1) Considering the total number of interviewees at each level.
(2) Considering the total number of interviewees at each level that completed a course.

2 = semi-skilled workers; 3 = supervisors of semi-skilled; 4 = skilled workers; 5 = foremen of skilled workers; 6 = practical technician; 7 = school-trained technician; 8 = engineers.

particular differences from one sector to another. The number of courses does, however, increase with a corresponding rise in occupational level.

Large discrepancies in the average duration of courses are observed from one sector to another: 338 hours in clothing, 1 409 hours in electronics, and 1 647 hours in mechanical goods. These differences seem to be linked with the type of vocational training courses available in each field. Also, in the mechanical goods sector, for example, the high average in the number of course hours is directly related to the large percentage of skilled workers who have taken training courses at SENAI. Courses offered by SENAI are longer than others available on the market.

It is also noted that an increase in the average number of course hours completed is generally linked to the subject's occupational level. Technicians and engineers (levels 6 to 8) completed more course hours than skilled workers (levels 4 and 5), and the latter, more than semi-skilled workers (levels 3 and 4).

Training courses are generally relevant to the occupation held, although this varies significantly from one staff level to another. The percentage of employees having completed a course relevant to their work is lower among semi-skilled workers; so, too, is the proportion of course hours related to their occupations - see figures below:

Interviewees' level	Interviewees having completed courses related to their present position(1)	Hours related to the present position as compared to the total number of hours completed
	%	%
2 and 3	70	77
4 and 5	95	95
6, 7 and 8	94	94

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1. From the total number of entrepreneurs that completed a course at each level.

In short, vocational training courses are an advantage, varying positively according to occupational level. People in more skilled jobs are usually better prepared, not only in terms of regular schooling, but also in terms of courses and other pertinent training.

Apart from the occupational level, a few other variables account for differences in the employees' vocational training. These variables were, in order of importance: education, sex and place of birth.(1) Together, these three variables account for 18.3 per cent of the variance in the total number of hours of training received (completed courses). Education (number of years of studies) alone accounts for 12.5 per cent of the variance. Its effect is positive: the better educated workers also received more hours of vocational training. The sex of the employee accounts for 4.7 per cent and place of birth for only 1.1 per cent of the variance in length of training, but both factors have the same discriminating effect as noted in the case of education: women and migrant workers received less vocational training. The dual disadvantage encountered by women and migrant workers in terms of education and vocational training, is reflected in their professional life and contributes among other things to a limitation of their wages and promotion possibilities. We shall examine this in more detail later on.

7.3 Occupational background

7.3.1 General characteristics (Table II.33, Annex A)

(a) Age of entry into the labour market

Like the majority of the population, most of those interviewed (68 per cent) began work between the ages of 12 and 17; 20 per cent began at 18 years or more, and 12 per cent, at less than 12 years of age, although this is actually illegal.

Fifteen years of age is therefore the average age

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1. Significant at 5 per cent.

at which people entered the labour market, although small differences are noted between sectors: 14 years in mechanical goods, 15 in electronics and 16 in clothing. The higher average age in clothing is probably due to the large percentage of women employed in this sector. As they are more sheltered and/or useful at home, they generally begin to work "outside" at a later age than men.

Age differences are more pronounced with regard to occupational level: blue collar workers and practical technicians entered the labour market on average at the age of 15 years; school trained technicians (level 7) and engineers (level 8) on the other hand, started working on average at 17 and 18 years of age, respectively. Since they came from a more privileged social background, they were able to postpone their entry into the labour market and invest more time in their studies. These factors helped them to get a better situation in the company's occupational hierarchy later on. Nevertheless, many of them continued studying while working.

(b) Years of experience

On average, interviewees have had 16 years' work experience; only in the mechanical goods sector does the average reach 17 years. This result is in keeping with the fact that employees in this sector began work at an earlier age.

Differences in the number of years of experience according to occupational level match our previous observations with respect to present age and age of entry into the labour market. Employees in jobs requiring a large amount of experience - levels 5 and 6 - are older and have been working for a longer time; whereas those who have jobs requiring a formal education - levels 7 and 8 - are younger and/or have less years of experience. See data below:

Level of Interviewees	Average age of entry into the labour market	Average age at the time of the survey	Average number of years of working experience
2 semi-skilled worker	14 years	30 years	14 years
3 supervisor of semi-skilled-workers	15 "	30 "	15 "
4 skilled worker	15 "	31 "	15 "
5 foreman	14 "	38 "	24 "
6 practical technician	14 "	38 "	24 "
7 school-trained technician	17 "	30 "	13 "
8 engineer	18 "	32 "	13 "

(c) Number of jobs held[1]

As may be deduced from their total number of years of experience in the labour market, most interviewees have had several jobs before their present one - three previous jobs on average. Thirty-two of the people interviewed - 10 in clothing, 8 in mechanical goods and 14 in electronics - have had only one job, i.e., the one they had at the time of the survey. The mechanical goods group, who have been on the labour market for the longest time, also had the largest number of jobs (4 on average) previous to their present one.

For over half of the group (53 per cent), the present job is the one which has been held for the longest time. Thirteen per cent stayed at their previous job for the longest time. Thirteen per cent had held a job other than their previous one, or their first one, for the longest amount of time.

We shall now examine the three main landmarks in

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1. A "job" is defined as any regular activity in the labour market - family worker, self-employed, wage-earner, owner and volunteer.

the employees' professional life: their first job, their previous job, and their present job (i.e. at the time of the survey).(1)

7.3.2 The first job(2) (Table II.34, Annex A)

As could be expected, the conditions upon which employees entered the labour market are closely linked to their social background. Thus, the higher their fathers' occupational status and educational level, the higher their own status in their first job and the more likely they were to work in an urban setting, in the trade and service sectors where jobs are less demanding than in the industrial sector.

People who began work in the agricultural sector were generally sons of manual workers who were unable to complete primary school. A better social background usually allowed people to postpone their entry into the labour market and to pursue their studies for a longer period of time. Both factors then contributed to a better start in life from a professional point of view: the higher the present occupational level amongst those interviewed, the higher their initial status in the labour market. See below:

Present occupational level	Average status in the first job
Semi-skilled workers (2 and 3)	3
Skilled workers (4 and 5)	4
Technicians (6 and 7)	5
Engineers (8)	6

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1. We could also have included another group which mention as their longest job, a different one from those mentioned above, but as only 37 interviewees answer to this description, we decided not to complicate the analysis further.

2. We included 32 employees for whom the present job was also the first one they had ever held.

Employees and entrepreneurs began work at about the same age. Employees entered the labour market at 15 years of age, on average, at status level 4. Entrepreneurs also began work at about age 15, but at status level 5. Thus, both employees and entrepreneurs entered the labour market under similar conditions as the population at large: they started work at a young age, in a low qualified job which was not necessarily decisive in terms of their future career. Their real career prospects took shape at a later date, depending on their social background, and the possibility of continuing their studies, and undergoing vocational training.

Below is a summary of the main characteristics of the interviewees' first job:

(a) Sector of activity

Over two-thirds of the group (70 per cent) began work in the industrial sector; 20 per cent began in the area of trade and services, and 10 per cent in the agricultural sector. Employees in the clothing group showed a marked tendency to work in the industrial sector from the very beginning of their career (67 per cent). This is probably due to the large number of women in the clothing industry, and to the relatively simple jobs they do - plain stiching, basting, etc. These jobs can be easily done by young people with no previous work experience and have been trained mainly at home. The largest percentage having begun work in the service sector are now in electronics (25 per cent), and most of those who start off in agriculture are now in the mechanical goods sector (16 per cent). In both these groups, though, the majority started off in the metal products and machinery industry, in activities more or less related to their present occupation.

(b) Number of years people stayed in their first job

Employees remained in their first job for five years on average. As many of them began work at the age of 13 or 14, it is clear that they did not undertake many changes in activity until they were of age (18 years) or, in the case of the men, had completed their military training. It is not unusual for people to wait until this moment to make any important or definite decision concerning their future.

Differences noted by occupational levels are coherent with differences in entry into the labour market. Technicians remained in their first job for three years on average, while engineers stayed for only one year. Employees at all other levels (2 to 5) stayed on for about five years or more.

(c) Company size

More than half of the group started off in small or micro companies; 20 per cent in medium-sized companies, and 11 per cent in large ones. Twelve per cent - for the most part in the clothing industry - did not start off in a company, but began working on their own, as maids, or as rural workers.(1) The percentage of employees who started work in small or micro firms is high in all three sectors: 55 per cent in electronics, 51 per cent in clothing, and 63 per cent in mechanical goods.

(d) Working conditions

Most of the group (77 per cent) started off as employees; from 69 per cent in clothing, to 82 per cent in electronics. The others began by working as: assistants in family-owned businesses (8 per cent), self-employed (6 per cent), rural workers (5 per cent), maids (4 per cent) or partner/owners (1 per cent).

(e) Occupation and status

Although 65 per cent of the interviewees began work in production, only 15 per cent started off in the same occupation as the one they had at the time of the survey; 33 per cent began work in an occupation related to their present one, and 17 per cent in a different one. The remaining 35 per cent started off in an occupation which was both completely different to their present one and

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1. Rural workers include those who worked on small family plots of land, or on very small farms.

unrelated to production. The largest proportion of employees who have never changed their occupation (26 per cent), or whose first occupation was related to their present one (32 per cent) is found in the clothing sector.

The group's first occupational status was predictably low, considering the age at which they had entered the labour market, and under what conditions. Over 70 per cent of the interviewees started off within the first four levels of the occupational scale, and almost all (96 per cent) were in the bottom half, up to level 6. Only 4 per cent reached levels 7 to 11, and their average status level was 4. The most frequently mentioned occupations were those of: janitor, maid, rural worker, assistant-operator in the industrial sector, office-boy, barman/maid, typist, assistant, or apprentice to semi-skilled and skilled employees.

7.3.3. The previous job (Table II.35, Annex A)

Since 32 of the employees had not worked elsewhere, only 246 interviewees gave information on their previous job; this includes the employees whose previous job was also their first one.

(a) Sector of activity

The majority of those interviewed were working in the industrial sector (83 per cent), before they joined their present firms, most of them in the very same industry in which they are currently working, or related to it. Sixteen per cent worked in the service sector, and only 1 per cent worked in the agricultural sector. Sectorial profiles were as follows:

Previous industry	Clothing	Electronics	Mechanical Goods
	%	%	%
Industrial sector: same industry or a related one	79	37	56
Different industry in the industrial sector	7	40	30
Trade and services	14	22	13
Agriculture	-	1	1

These results might be explained in part by the "specific" or, on the contrary, "general" character of the jobs available in each industry. Comparatively speaking, jobs in the clothing industry are usually more "specific" to the industry. Employees in the mechanical goods and electronics industry, however, can change over more easily from one industry to another. Furthermore, firms in the clothing industry usually require their employees to have had previous experience, so that people coming from other sectors are less likely to be hired. This is not the case in electronics, and probably accounts for the fact that a large percentage of its employees worked in another industry - including clothing - and even in another sector, such as trade and services, before joining their present firm.

(b) Company size

Small companies usually hire people who have previously worked in companies the same size as their own: this is the case with 52 per cent of the employees we interviewed; another 26 per cent came from average-sized companies and only 16 per cent from large ones; 6 per cent have not worked in a company before. This finding is not altogether surprising: on the one hand firms may prefer to recruit employees who are used to working in small firms; on the other hand employees may not want to change from a large company to a small one as salaries are likely to be lower.

The percentage of employees who came from small or minor-sized companies is high in every sector, although it varies from 46 per cent in electronics to 55 per cent in clothing. The proportion of those who came from large companies is significantly larger in the mechanical goods and electronics sectors: 20 per cent as opposed to 10 per cent in clothing. This may be the result of the internal structure of these two industries, or else due to the rise of unemployment in large companies in these industries since 1981. Unemployment levels particularly in metal products and machinery companies may have intensified a steady flow of manpower from large to small-sized companies.

(c) Number of years' experience of employees in their previous job

On the whole employees spent little time in the job immediately preceding their present one. One-third remained in this previous job for one year at the most, while another third stayed in it for no more than three years (see figures below). In fact, this three-year limit (39 months), constitutes a group average, with small differences from one sector to another.

Number of years in the job preceding their present one	Total	Clothing	Electronics	Mechanical Goods
	%	%	%	%
Up to 1 year	32	30	29	36
Over 1 to 3 years	33	33	34	32
More than 3 years	35	37	37	32
Total (100%)	246	93	73	80

(d) Employment Status

About 90 per cent of the employees had the same employment status in their preceding job as when we interviewed them, i.e. were wage-earners. The rest were self-employed (4 per cent), worked as assistants in a family business (2.5 per cent), as partners in small-sized companies (2.5 per cent), or as maids or rural workers (2 per cent).

(e) Occupation and status

A little over one-third of the group (36 per cent) already had the same occupation in the job immediately preceding their present one, while the remaining 28 per cent worked in completely unrelated occupations. The vast majority (84 per cent) worked in production. Clothing has the largest percentage of employees with previous experience in their present occupation - 52 per cent, as opposed to 22 per cent in electronics and 31 per cent in mechanical goods. The largest group in these last two sectors is made up of employees whose previous job was related but not identical to their present one - 40 per cent.

For most of the employees interviewed (60 per cent), the change in job (from the previous to the present one), did not result in a change in occupational status. When a change in occupational status did occur, this meant a promotion for 26 per cent of them who left the job for a more prestigious one, and a regression for 13 per cent who actually began their new job under less favourable conditions than in their previous one.

7.3.4 The present job (Table 7.3)

(a) Number of years of experience

Most employees have been in their present job for six years on average - which indicates a relative stability on their part. Results are similar from one sector to another: five years in clothing, seven in electronics, and six in mechanical goods.

The majority have been in their present job between five and ten years (25 per cent), followed by 22 per cent who have been employed for three to five years. In clothing, however, the opposite occurs. Twenty-nine per cent have been in their present job for three to five years, while only 23 per cent have been there for five to ten years. The largest number of people employed for less than a year are also found in the clothing sector (19 per cent as opposed to 15 per cent in electronics and 7 per cent in mechanical goods). This indicates that there is a larger turnover in manpower in the clothing sector.

Differences from one sector to another are probably linked to the occupational structure of our sample, since the degree of stability of employees within a job differs from one occupational level to another. These differences are consistent with other indicators concerning professional experience: the employees with most seniority are found in those jobs requiring skills and/or years of experience - as in levels 3, 5 and 6 (supervisors, foremen and practical technicians); the newest people to the job are either unskilled workers (whose turnover is much higher) or employees who have advanced more rapidly as a result of their training and education (engineers and technicians). The differences

Table 7.3

Employees: The present job - seniority, recruitment and selection

(in %)

Breakdown		Total	Sector		
			Clothing %	Electronics %	Mechanical Goods %
Seniority in the firm	Up to 12	14.0	19.4	15.0	6.8
	13-24	14.0	12.6	15.0	14.8
	25-36	11.1	7.8	8.0	18.2
	37-60	22.3	29.1	17.2	19.3
	61-120	24.6	23.3	24.1	26.1
	121-180	7.5	5.8	9.2	8.0
	181 or more	6.5	2.0	11.5	6.8
	Total (100 %)	278	103	87	88
	Average (in months)	70	56	80	75
Recruitment process	Through a company employee	29.8	23.3	34.5	33.0
	Company reputation	21.0	30.0	15.0	16.0
	Through a friend(s) of the owner(s)	15.5	17.5	13.8	14.8
	The employee knew the owner	14.7	13.6	17.2	13.6
	Newspaper advertisement	11.5	10.6	10.3	13.6
	The applicant was a relative of the owner(s)	3.5	2.0	4.6	4.5
	Other (employment agency, school or other)	4.0	3.0	4.6	4.5
	Total (100 %)	278	103	87	88
Selection process	Did nothing besides showing his work papers	37.0	35.0	32.1	44.4
	Took a practical test	26.0	42.7	15.0	17.0
	Interview	18.0	4.8	31.0	20.4
	Test and interview	17.6	15.5	19.6	18.2
	Other	1.4	2.0	2.3	-
	Total (100 %)	278	103	87	88

according to level are as follows:

Interviewees' level	Average number of years of in present firm
2 - Semi-skilled worker	4
3 - Supervisor of semi-skilled workers	7
4 - Skilled worker	5
5 - Foreman	9
6 - Practical technician	7
7 - School-trained technician	5
8 - Engineers	4

Skilled and semi-skilled workers have an average seniority not substantially different from that of other employees in the industrial sector, as far as we can judge comparing former CQP-1 SENAI-SP skilled and semi-skilled employees. This shows that small companies do not suffer from a much higher rate of turnover than other companies - at least as regards the core skilled personnel, whose contribution to overall company performance is very important.

(b) How employees were recruited for the job

Many employees heard about their present job either through other employees in the company (30 per cent) or through a vacancy announcement at the gate (21 per cent). These are the two main sources of recruitment mentioned by the companies. In clothing, the companies claim that advertising at the company gate was the most important method of recruiting new employees.

Other employees came to work at their present company either because they knew the owner, or because they were members of his family (18 per cent) or friends, or relations (16 per cent). Advertisements in newspapers were used only 11 per cent of the time, and in the remaining 4 per cent of cases, applicants were sent by employment agencies, student placement agencies, or other.

Applicants thus have been and are selected informally, which leaves lots of room for recommendation and/or references from other employees, friends or relatives.

Different methods, nevertheless, are used to recruit applicants at different levels. Advertisements at the gate are used to recruit blue-collar workers (level 2 to 5) particularly semi-skilled workers (level 2). From the level of technician on, more formal methods are adopted, such as advertisements in newspapers or employment agencies. Personal references, however, are highly valued and predominated at all levels. These are given by other employees, by the owner's friends, relations or family members. See data below:

Interviewees' Occupational level	Recruitment Methods			
	Personal references	Vacancy Advertisement at the gate	Other (agency ads)	Total
	%	%	%	(n = 100%)
2 semi-skilled worker	51	38	11	53
3 supervisor of semi-skilled-workers	75	17	8	24
4 skilled worker	65	20	15	113
5 foreman	67	18	31	45
6 practical technician	54	15	26	13
7 school-trained technician	70	4	29	23
8 engineer	71	-	15	7
Total	64	21	-	278

(c) The selection process

The selection process is consistent with the recruitment process. Thirty-seven per cent of those who were recommended or had personal references only had to show their work papers to further their application. Eighteen per cent had an interview, 26 per cent took a series of practical tests, and a further 18 per cent a combination of both interview and practical tests.

Clothing stands out as the sector that recruits the highest number of "unknown" employees, through advertisements at the company gate. Consequently, it is in this sector that employees were most often required to demonstrate their abilities through a number of practical tests (43 per cent of applications). In electronics, interviews played a more important role, representing 31 per cent of recruitment methods, probably because of the large number of technicians and engineers in this sector. In fact, at these levels, selection is primarily based on interviews or on a combination of interviews and practical tests, while at worker level (2 to 5), tests are used.

(d) Occupation and hierarchy within the company (Table 7.4)

The occupations of the employees included in our sample are representative of the different jobs most commonly found in each sector, as shown in the list below:

Level	Clothing	Electronics	Mechanical Goods
2 - Semi-skilled worker	Cloth cutter Baster	Operator of an assembly line	Turner Automatic lathe-turner
3 - Supervisor of semi-skilled workers	Cloth-cutting supervisor	Head of assembly line	Only 1 interviewee
4 - Skilled worker	Seamstress Patternmaker	Lathe setter Machine fitter Electronics fitter	Lathe setter Milling machine operator Machine rectifier Fitter Toolmaker

continued

Level	Clothing	Electronics	Mechanical Goods
5 - Foremen of skilled workers	Ready-made-clothes foreman	Electro-electronics craftsman Supervisor of metal work	Machining craftsman/foreman Toolmaking craftsman and foreman
6 - Practical technician	Designer Production manager	Electronics technician	Only 1 interviewee
7 - School-trained technician	-	Electronics technician	Project designer
8 - Engineers	-	Electronics engineer	-

Occupational status is closely tied to the employee's occupational level - status averages range from occupational status 4 - for level 2 (semi-skilled workers) to occupational status 11 - for level 8 (engineers), according to the scale we used.

Employees with subordinates are found at all levels, although the situation is obviously more frequent at the level of supervisors, foremen and managers. Almost all heads of sections (level 3) and foremen (level 5) have subordinates working under them, although strangely enough some do not. Over half of the technicians - 61 per cent at level 6, and 52 per cent at level 7 - head a team of employees. The same applies for all engineers (level 8). Even among semi-skilled (2) and skilled workers (4) there are a few employees who have assistants under their orders.

Teams are made up of 11 people on average, although small differences exist according to occupational levels. Supervisors of semi-skilled workers (level 3) work with groups of seven, on average, while craftsmen and foremen (5) head groups of 15 people. There is little difference in the number of employees in the latter group, and the number working under technicians and engineers.

(e) Work papers and weekly hours

As most of the employees in the sample were in fact selected by the entrepreneurs themselves, it is not surprising to find that 99 per cent of them have their work papers in order. Only 6 per cent are registered as working in a job other than the one they actually hold.

Similarly, almost all employees (91 per cent) admit to working only the official number of weekly hours permitted by law (48 hours). Seven per cent work less than that, and 2 per cent, more. It is quite possible however, that in spite of the recession, a larger proportion of them worked more than 48 hours a week. In early 1982, for example, 16 per cent of former CQP-1 students worked an average of 49 hours or more per week. According to data from the 1980 population census, this proportion reached 23 per cent among São Paulo's industrial workers. Data for the census however, was obtained through door-to-door surveys which allow for greater freedom of expression.

As far as illegal employment is concerned, very few of the workers in the industrial sector do not have their work papers in order - 6 per cent in the Greater São Paulo area in 1976 - (cf. PNAD-76). The proportion of non-registered workers supposedly varies inversely with the size of the company, but we are unable to check this hypothesis given the conditions of our research.

7.4 Mobility

Three aspects of mobility will be analysed under the following titles:

- social or inter-generational mobility, measured by comparing the interviewee's present status to his father's status (based on the occupation held for the longest time);
- professional mobility, comparing the employee's present status with that of his first job;
- functional mobility, which measures, again in terms of status, the employee's progress in his present firm, from his first occupation to the one he currently holds.

By comparing status averages for all of the points

Table 7.4

Employee status according to occupational level

Status	Interviewee's occupational level							
	Semi-skilled worker 2	Supervisor of semi-skilled workers 3	Skilled worker 4	Foreman 5	Technician Practical 6	Technician School-trained 7	Engineer 8	Total
02	5.7	-	-	-	-	-	-	1.1
04	94.3	-	-	-	-	-	-	17.6
05	-	-	7.1	-	-	-	-	3.3
06	-	100	92.9	-	15.4	4.3	-	47.0
07	-	-	-	100	-	-	-	16.6
08	-	-	-	-	69.2	69.5	-	8.9
11	-	-	-	-	15.4	26.2	57.1	4.4
12	-	-	-	-	-	-	42.9	1.1
Total (100%)	53	24	113	45	13	23	7	278
Average status	4	6	6	7	8	9	11	6
Has subordinates	2 %	96 %	12 %	96 %	61 %	52 %	100 %	39 %
Average number of subordinates	1	7	4	15	16	12	15	11

For significance of status level see Annex F.

mentioned above, we see that interviewees have followed an ascending course compared to their parents or their own previous jobs or occupations. See table below:

Present Level	Father's status	Status in first job	Status in previous job	Status in first occupation in present company	Present status in present occupation
2 semi-skilled worker	3	3	3	3	4
3 supervisor	3	3	3	4	6
4 skilled worker	3	3	4	5	6
5 foreman	4	4	5	6	7
6/7 technician	6	5	6	7	8
8 engineer	7	6	9	9	11

The three types of mobility mentioned above are inter-related and they have been separated principally for analytical purposes. One observes that although some may have shown jumps in the occupational status during their career, people have basically remained in the same social strata (that of their father). This reveals that the possibility of a social ascension, when taken in a wider context, is not limitless in Brazil. It is, in fact, conditioned not only by personal performance and effort, but by social considerations as well.

7.4.1 Social mobility

About 80 per cent of the employees have more prestigious occupations than their parents had; 16 per cent hold lower status jobs, and 5 per cent are in the same sort of job, in terms of status. Differences according to occupational level reflect the importance of various factors, such as: age, social background, education and professional training. On the one hand, the lower the father's social background, the higher the chances are that children will attain a higher social status than their parents. At the same time, more education, vocational training and experience also lead to an ascension in the occupational scale.

Present Level		Social Mobility (%)			
		Ascending	Declining	None	Total (100%)
2	semi-skilled worker	62	34	3	53
3	supervisor	87	13	-	24
4	skilled worker	82	14	4	113
5	foreman	80	2	18	45
6/7	technician	89	11	-	36
8	engineer	72	14	14	7
	Total	79	16	5	278

A combination of these factors explains why those who have not progressed as much proportionately in terms of social ascension, are engineers (level 8) on one end of the scale, and semi-skilled workers (level 2) at the other end. Engineers are in this category because being socially well-off to begin with, it is comparatively more difficult for them to better parental performances; it is also more difficult for semi-skilled workers because they remain at a very low professional level. In fact, semi-skilled workers, who combine an underprivileged social background with a low education and lack of vocational training, are the ones who most often undergo descending social mobility.

7.4.2 Professional mobility

Almost all interviewees were in the same or in a better professional situation at the time of the survey, than when they started work. Only 31 per cent suffered a drop in terms of occupational prestige, according to the data below:

Present Level		Professional Mobility (%) Ascending	Declining	None	Total (100%)
2	semi-skilled worker	47	8	45	53
3	supervisor	92	4	4	24
4	skilled worker	71	2	27	113
5	foreman	96	-	4	45
6/7	technician	89	-	11	36
8	engineer	100	-	-	7
	Total	76	2	22	278

Differences result from the fact that proportionately, professional ascension tends to occur more frequently among:

- men;
- people originating from the state capital or its metropolitan area;
- graduates of technical courses at secondary or higher education level;
- people who have completed vocational training courses;
- people with greater professional experience.

Semi-skilled workers are the most disadvantaged according to the above. It therefore stands to reason that many of them have not progressed in their career (45 per cent) and that some have actually regressed in terms of the occupational scale (8 per cent). It must be noted that in four out of seven cases where a drop in status occured, women are involved.

7.4.3 Functional mobility

Almost 60 per cent of employees were in the same occupation at the time of the survey as they had been upon entering the company. Thus, only 40 per cent have risen in the occupational scale. There is only one case - obviously one involving a woman - where someone has actually regressed in terms of the company's functional hierarchy. Below is a profile of the various levels involved:

Present Level		Functional Mobility (%) Ascending	None	Total (100%)
2	semi-skilled worker	21	79	53
3	supervisor	79	21	24
4	skilled worker	30	70	112 (1)
5	foreman	62	38	45
6/7	technician	36	64	36
8	engineer	57	43	7
	Total	40	60	277 (1)

(1) We exclude one case in which a drop in mobility occurs.

Seniority within the company is predictably the most decisive factor in functional ascension. The greatest amount of promotions therefore occurred for those who are now at levels 3 (supervisors) and 5 (foremen). This confirms the companies' tendency to fill positions of supervisors and foremen which require loyalty and experience, by internal promotion from within.

Other factors which interfere in the process of ascending functional mobility are sex and geographic background, most promotions occurring among men who originate from the state capital, or from the Greater Sao Paulo area.

7.4.4 Synthesis

In short, social and professional upward mobility depends on a combination of factors, among which the following stand out:

- sex: women are subject to discrimination;
- geographic background: which favours those who are originally from the state capital or the surrounding area, rather than migrant workers;
- social background: which contributes to a more or less favourable start in life as well as to access to a better education;
- education and vocational training: which "save

time" in the labour market and allow access to more prestigious situations;

- experience: which eventually raises employees to a higher level in the occupational scale.

Those who are less privileged as regards the above - semi-skilled workers, for example - tend to have a more static professional curb, or even one that drops in relation to their parents or to their own past jobs and activities.

7.5 Earnings

7.5.1 General characteristics (Table 7.5)

A study on earnings makes more sense if it takes into account occupational levels which reflect status and hierarchy within a company. These variables have a great impact on wages. Furthermore, as we have already seen, within one occupational level, employees can have different characteristics in terms of age, experience, education and vocational training - all variables which are more or less tied to differences in earnings.

In fact, the higher the occupational level, the higher the earnings bracket in which employees are placed. Earnings averages increase on an ascending scale which at the time of the survey ran from 96 thousand Cruzeiros for semi-skilled workers (level 2), to 550 thousand Cruzeiros for engineers (level 8).(1)

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1. These data were collected between September and November 1983. In September, the minimum wage in São Paulo was 35 thousand Cruzeiros, and on November 1st, it went up to 57 thousand. For the purposes of this study, the different times at which the increase took place in each sector is more important than the increases themselves. The majority of personnel in the clothing industry got their rise in July. Employees in the mechanical goods and electronics sector got their rise in November. Most of the data collection concerning the clothing industry was carried out in September, by which time the majority of its employees had received a rise. In mechanical goods and electronics, however, our survey was done in October and early November, just one month before most of the employees in these two sectors got an increase. So as to avoid possible problems, we tried to register salaries taking into account the increase which had been foreseen for November 1st. As our attempts were often unsuccessful, however, this leads us to conclude that the higher wages observed in mechanical goods and electronics compared to the clothing sector, should be even more marked than appears here.

Table 7.5

Employees: Average earnings or different occupational levels, by sex, age, education, training, sector and company size (in September 1983 1 000.00 Cr$

Level	Breakdown	Occupational Level							General Average	(N)
		2	3	4	5	6	7	8		
Sex	Men	114	186	196	308	238	370	550	244	(175)
	Women	82	112	99	178	220	190	-	107	(103)
Age	16-19 years	56	49	67	-	-	111	-	61	(17)
	20-29 years	88	101	130	265	227	266	336	153	(99)
	30-39 years	130	193	187	280	254	414	711	229	(106)
	40-49 years	130	195	187	322	152	631	-	247	(39)
	50 or more years	84	-	123	242	276	621	-	214	(17)
Education	Incomplete primary	91	-	89	201	-	-	-	107	(26)
	Complete primary	102	123	167	249	185	-	-	165	(141)
	1st level education (complete)	59	216	154	358	244	195(*)	-	173	(61)
	Secondary (complete)	171	-	162	374	302	393	999	357	(32)
	Higher education (complete)	-	62	130	134	225	310	477	308	(18)
Training Complete	Has	106	194	189	289	207	342	574	239	(137)
	Has none	93	126	126	245	399	400	492	149	(141)
Company sector	Clothing	91	147	99	195	223	-	-	122	(103)
	Electronics	86	159	180	336	252	345	550	247	(87)
	Mechanical goods	124	(**)	200	307	(**)	389	-	223	(88)
Company size	Small (1-19)	88	106	134	235	237	213	-	144	(86)
	Medium (20-49)	88	163	144	262	249	343	706	196	(130)
	Large (50-99)	138	176	219	358	218	435	343	252	(64)
	General average	96	149	156	274	237	354	550	193	
	(N)	(53)	(24)	(113)	(45)	(13)	(23)	(7)		(278)

(*) Two school-trained technicians were still completing their technical training. They have been placed in the "complete elementary school" level in this table.

(**) There is only one interviewee with this answer.

Average earnings are practically the same at levels 3 and 4, supervisors of semi-skilled workers and skilled workers, which shows that both levels are considered equal as far as their productive capacity is concerned. At the supervisory level (level 3), experience and sense of responsibility compensate for lack of education and training and these employees are considered almost as good as the better-trained skilled workers.

Foremen of skilled workers and craftsmen (level 5) have higher earnings averages than practical technicians (level 6) - 274 and 237 thousand Cruzeiros, respectively. It is possible that these two professions - foreman and practical technician - are not very different in practice. Nonetheless, foremen have generally been employed for a longer time than the practical technician we interviewed, which perhaps accounts for their slightly better earnings.

Other variables also have an impact on earnings. Sex is no doubt important, because women earn less than men at every occupational level. This has already been observed in other studies.(1)

Age, and therefore experience, has a positive influence on salary averages: the older employees earn more than their younger colleagues. This tendency reverses itself after the age 50, which indicates a trailing off of the impact of experience on wage-earning capacity. These tendencies have been described in previous studies.(2)

Education and vocational training also have a positive influence on earnings averages, although their impact varies from one occupational level to another. The reason for this will be developed later on in the section

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1. Os tecnicos formados pelo SENAI: analise das variacoes de salario. By Elenice M. LEITE - DPEA - SENAI São Paulo. 1980 mimeo.

2. O valor da formacão profissional no mercado de trabalho. By J. PASTORE e MARISA DE ASSIS. Estudos Preliminores 4 DPEA-SENAI - São Paulo, 1977

on regression analysis.

Differences in earnings according to company size are as expected: the smallest companies pay lower salaries - 144 thousand Cruzeiros on the average, as opposed to 252 thousand Cruzeiros in larger-sized companies (Strata 3).

These salary averages according to company size reflect to a certain extent the companies' occupational structure. Technicians and engineers, who are well-paid professionals, are found only in our sample's larger companies. Differences in earnings according to company size however, persist even when occupational levels are held constant, i.e. in the same occupational level. Salary averages are lower in small companies and higher in large companies. Two exceptions occur at levels 6 (practical technician) and 8 (engineers), where salary averages are actually higher in medium-sized companies. This may be an atypical situation, however, resulting from the limited number of employees at these levels in our study.

Differences in earnings from one sector to another also reflect the different types of jobs available in each one. The average salary in the electronics sector, which traditionally hires many technicians and engineers, is higher than the average salary in the other two sectors studied. Discrepancies between the electronics and mechanical goods sectors decrease, however, when occupational levels are taken into account. In some cases, differences are actually reversed in favour of the mechanical goods sector. Salaries in the clothing sector, however, are consistantly lower than in the other two sectors, probably due to the large number of women in the group. Only at the level of unskilled workers are earnings in both the clothing and electronics sectors practically the same. This is also due to the large number of women employed at this level in electronics.

A larger comparison, between the sectors in our survey and the same industries in the Greater São Paulo area, is only possible on the basis of 1981 data. According to data published in the statistical year book of São Paulo(1), differences in averages between the two are not very large, although the average earnings in the sectors we studied are slightly higher. See data below:

Average earnings in the sectors in the survey (as a multiple of the minimum wage)	Average earnings in the Greater São Paulo area - 1981 (as a multiple of the minimum wage)
Clothing - 3, 5	Clothing, footwear and clothes manufacturing - 2, 1
Electronics - 7, 1	Electrical and communications equipment - 5, 3
Mechanical goods - 6, 4	Mechanical goods - 5, 8
Average - 5, 5	(Industrial) average - 4, 4

Apart from the fact that these differences could be due to the two different years in which the data were collected, it should be remembered that in our sample preference has been given to senior and skilled employees, thus excluding the less well-paid personnel. This surely accounts for the slightly better earnings among the employees in our sample - engineers being the exception to the rule (Table 7.6).

Data on earnings of employees in similar occupations in Greater São Paulo confirm that occupational levels have a positive influence on salaries, and that there are significant differences from one sector to another. For example, wages for skilled employees (level 4) in the electronics and mechanical goods industries - which are technologically more advanced than the clothing industry - are higher than those in the clothing industry.

On the other hand, it is well-known that steel-workers, many of whom work in mechanical goods and electronics, belong to one of the most powerful and active unions in São Paulo. These unions protect the workers'

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1. MW = Cr$ 9 144.00 in 1981 and Cr$ 35 000.00 in 1983. MW is the minimum wage.

Table 7.6

Average earnings: A comparison between our interviewees and similar occupations in the Greater São Paulo area

Occupational level	Detailed occupations	Corresponding industry	Average earnings in the Greater São Paulo (1981) (as a multiple of MW(*)	Interviewees' average earnings (as a multiple of MW(**)
2 - Semi-skilled worker	Seamstresses for mass produced garments	Clothing	1.7	2.6
	Electronic equipment fitters	Electronics	2.5	2.5
	Machine-tool operator	Mechanical goods	3.5	3.6
4 - Skilled worker	Pattern designer/cloth cutter	Clothing	2,8	3.8
	Tailors, seamstresses, dressmaker	Clothing	1.9	
	Turners, milling machinist,	Mechanical goods		5.7
	Rectifier	Mechanical goods	5.4	
	Maintenance mechanics	Mechanical goods	5.6	
7 - Technician	Electric and electronics technician	Electronics	9.3	9.8
	Mechanics technician	Mechanical goods	11.1	11.1
8 - Engineers	Electric and electronics engineer	Electronics	19.7	15.7

* MW = Minimum wage = 9 100CR$ in 1981 (cf. SEADE, 1983, op.cit).

Source: Fundacaõ Sistema Estadual de Análise de Dades (SEADE), Anuário EstatÏstico de Sao Paulo, 1982, São Paulo, 1983.

** MW = 35 000.00 CR$ until 31.10.83.

salary levels, so that they are actually better paid than in other of industries.

7.5.2 Factors determining salaries

We have just seen that many variables influence the employee's level of salary: his occupational level, which is closely related to his level of education or degree of experience, the sex of the employee and also the type of firm in which he is working in terms of size, field of activity, etc. Many of these variables are, however, interconnected: firms in electronics tend to recruit more technicians and engineers than other sectors, firms in clothing employ a large number of women, etc. What are the factors that really determine salaries? and is it possible to isolate the specific effect of each variable?

Various labour market theories have been developed in this respect, which stress the importance of different variables. According to the human capital theory, differences in salaries reflect differences in levels of productivity and productivity itself is directly linked to the amount of "human capital" that a individual possesses. In other words, the differences in salaries between employees are due to differences in their level of education, training and experience. This theory does not explain however, why employees with the same skills and knowledge earn different salaries, either because they are a different sex or work in different companies. Nor does it explain why, in spite of the substantial development in education and training, income differentials between individuals have not diminished.

Contrary to the human capital theory, the labour market segmentation theory claims that there is no direct relationship between individuals' levels of productivity and salaries. The labour market is made up of different segments which appeared for different technological and historical reasons. In certain segments jobs are stable and well-paid, while in others they are unstable and badly-paid. Education is only one of the criteria for entering the best-paid jobs. Other criteria are age, sex of applicant, type of behaviour and social relations. Once in these jobs, employees progress according to seniority.

Other theories, such as the screening theory, argue that education is only used by employees as a filter for selecting the best employees. As the general educational level of the population increases, employees raise the minimum number of years of study required to enter a job, even though that job has not changed. Education therefore is not in itself an indicator of the employee's level of productivity and salary.

According to the job competition model, the level of productivity depends more on the characteristics of the job - as defined by the type of equipment available and the general management of the firm - than on the personal characteristics of a specific job-holder. Employees queue for the best-paid jobs. In such a context employers use education as a screening device and an indicator of the general knowledge and trainability of employees. What makes a job-holder productive is the specific vocational training or on-the-job training he receives, but better educated employees will be more easily and quickly trained.

With our limited sample of employees working in small firms in São Paulo, we cannot pretend to testing the various labour market theories and drawing general conclusions; even more so, as we are not entirely sure of the random character of our sample. Nevertheless, we are interested in determining the variables which best explain the variations in the salaries of the employees in our sample. Are they human capital variables (such as level of education, vocational training and experience), ascriptive variables (age, sex, social and residential background) or variables related to the firm (its sector of activity and size)?

Various studies have already shown that in Brazilian companies formal education and long vocational training (the type of formal education at SENAI, which combines general education and vocational training) explain to a large extent the variation in salaries. Is this also true in small enterprises or do such variables as sex, age, residential background, and experience have more influence; if so, this would be an indication that in these firms the management is more informal.

In addition, we would like to know which ways of acquiring skills and knowledge are most valued by small firms: years of formal schooling, vocational training, on-the-job training, etc. Do small firms train their own staff or do they prefer them to be trained already, and if so, with what kind of training?

In order to be able to answer these various questions, we have undertaken a number of multiple regression analyses. The dependent variable, i.e. the variable to be explained, has been taken as the logarithm of monthly earnings since the relationship between the salary and the position in the firm did not appear to be linear, but exponential. For independent variables, we have selected: the sex of the employee, his or her age, residential background, number of years of formal study, the stream followed in secondary education (general or technical), the total number of hours of vocational training completed, the seniority in the firm and finally his or her position in the firm (the occupational level), the size of the establishment and the sector of activity.(1)

The result of a stepwise regression shows that with those variables we can explain 61.5 per cent of the variance in earnings (Table 7.7). The most important variable explaining this variation is the position in the firm, which alone accounts for 33.3 per cent of the variance in earnings. The second most important variable is the sex of the employee: all things being equal, age, number of years of study, position, etc., women earn 14.6 per cent less than men. The third variation is age, followed by seniority in the firm and the number of years of study. Other variables account for relatively little variation in earnings: this seems to be the case for the number of hours of vocational training and also for the size and activity sector of the firm. The relatively low influence of education and training can probably be

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1. Sector of activity has been included as a dummy variable, the clothing sector being the reference category.

Table 7.7

Earning function multiple regression estimates: Dependent variable - log of monthly earnings
Occupational level included in the list of exogeneous variables

Occupational level	Multiple R	R square	RSQ change	Simple R	B	Beta
Occupational level	0.57732	0.33330	0.33330	0.57732	0.0503	0.25769
Sex	0.66018	0.43584	0.10255	-0.48914	-0.1469	-0.22688
Age	0.71582	0.51240	0.07655	0.33752	0.0080	0.25101
Seniority in the firm	0.73903	0.54616	0.03376	0.37878	0.0011	0.23216
Number of years of study	0.75445	0.56919	0.02303	0.39037	0.0185	0.21853
Size of the firm	0.76476	0.58486	0.01566	0.11520	0.2048	0.13937
Mechanics sector	0.77268	0.59704	0.01218	0.19579	0.0803	0.11930
Length of vocational training	0.77812	0.60547	0.00843	0.33574	0.0000	0.11830
Born interior of São Paulo State	0.78238	0.61212	0.00665	0.13443	0.0426	0.06204
Secondary school stream	0.78369	0.61418	•	0.24272	•	•
Born São Paulo city	0.78472	0.61579	•	0.04828	-•	-•
				Constant	1.0395	

• Not significant at 5 per cent level.

$R^2 = 0.6157$; R^2 adjusted = 0.599; F = 38.17; N = 274.

explained by the fact that they contribute mainly to the type of position held in the firm. The higher the number of years of study, the more likely the person is to have a higher position (r = 0.569) but for a given job, education and training do not have that much influence on salary.(1)

In a preliminary regression analysis, we had included a number of additional variables such as the employee's social background as measured by his father's number of years of study, and the vocational training institutions (as dummy variables) in which he studied. The results were not very different from those presented above,(2) but it is interesting to note that the father's education and the training institution had no significant effect on earnings. Once the employee's position in the firm and more specifically his education level are taken into account, the father's education does not have any impact. In other words, a higher social background helps employees to get a better education (r = 0.498) and a good job to start with but, for a given educational level and a given job, social origin has little influence on earnings.

Similarly once the length of vocational training is taken into consideration, the type of training institution does not matter very much. In fact there is a significant correlation between the length of training and the type of training institutions. Long courses are normally organised by SENAI while free independent schools give shorter courses.

Given the very high correlation between earnings and type of job held (r = 0.577), we have run another regression excluding this last variable. The result is the following (Table 7.8).

Excluding the employee's position in the firm, we can explain just a little less of the variance, i.e. 58 per cent instead of 61.5 per cent. The most important variables remain sex and age, which account respectively

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1. The various correlation coefficients are presented in Table II.38, Annex A.

2. See Table II.37, Annex A

Table 7.8

Earning fractions multiple regression estimates: Dependent variable - log of monthly earnings
Occupational level included in the list of exogeneous variables

Occupational level	Multiple R	R square	RSQ change	Simple R	B	Beta
Sex	0.49191	0.24197	0.24197	-0.49191	-0.1654	0.2567
Age	0.59923	0.35908	0.11711	0.34376	0.0097	0.3044
Number of years of study	0.68618	0.47084	0.11176	0.39269	0.0283	0.3342
Seniority in the firm	0.71874	0.51659	0.04574	0.37912	0.0011	0.2484
Vocational training	0.73516	0.54046	0.02387	0.33777	0.0000	0.1634
Size of the firm	0.74870	0.56055	0.02009	0.11334	0.0225	0.1530
Born interior of the State	0.75364	0.56797	0.00742	0.13946	0.0516	0.0753
Mechanics sector	0.75835	0.57509	0.00712	0.19755	0.0738	0.1104
Type of secondary education	0.76131	0.57960	*	0.24376	*	*
Born city of São Paulo	0.76189	0.58048	*	0.04288	*	*
Electronic sector	0.76194	0.58056	*	0.20220	*	*

* Constant not significant at 5 per cent level.

R^2 = 0.580; R^2 adjusted = 0.563; F = 33.47; N = 274.

for 24.2 per cent and 11.7 per cent of the variance, but these are now immediately followed by the number of years of study (explaining 11.1 per cent of the variance). The effect of vocational training is slightly higher than previously, but remains lower than the correlation between income and hours of training would suggest. This seems to indicate that the effect of training on income is partly due to the fact that training is positively correlated to education: those who undertake training are also those who already have had some years of education.

Among the variables concerning firms, the effect of size is the highest but the effect of the firm's sector of activity remains small. The larger the firm, the higher the salaries, and all variables taken into account, firms in the mechanical goods sector pay better.

What preliminary conclusion can we draw from this? The most striking result is that contrary to what the human capital theory states, ascriptive variables play a very important role in the determination of salaries. Small firms are definitely discriminatory against women and, to a certain extent, young people. Residential background also has a small but significant effect. Workers born in the city of São Paulo have had more education than the others (r = 0.281) but for a given educational level small firms seem to prefer migrant workers from the interior of the state. They are probably considered more docile and more reliable.

The second striking result is the informality of the labour market where small firms are concerned. The number of years of study is the third most important variable in determining salaries and we have seen that it is closely related to higher level of responsibility within the firm (r = 0.569), but age is also considered as a proxy for the worker's total number of years of experience. If this is true, it indicates that small firms prefer to recruit trained workers and that skills acquired through work experience are highly rewarded. Learning the trade on the job, and everything related to it in terms of social behaviour and attitudes, is as important as the number of years of study and vocational training. In fact, not only do the three ways of acquiring skills - general formal education, vocational training and experience - appear to be a substitute for one another, such as formal studies and experience, but they also to a large extent complement each other. This is one of the things we would like to check through path analysis.

The coefficients of multiple regression analysis only measure the direct impact of each variable on the dependent variable. Certain variables however, may not have a direct effect but a fairly strong indirect effect. In order to assess both direct and indirect effects, we have constructed a path model of salary determination. We have run a series of regression analyses, each variable being entered in a temporal sequence so as to reconstruct the biographical background of the employees in our sample. According to our path model, the effect of the different independent variables on salaries is as shown in Figure 1. Only the most important variables and those that have significant effect have been included in the chart so as to keep it readable.

Sex: Sex of the employee has a high effect on earnings, both directly and indirectly: all things being equal, women receive lower salaries than their male counterparts, and they also have less chance of continuing formal studies and having access to vocational training. Finally, they have less chance, later on, of obtaining a high position within the firm. If one adds up the indirect effect through education, training and access to good jobs, the indirect effect becomes quite high (0.128); the total effect of sex of employees on salaries is estimated at -0.356.

Socio-economic background: As measured by father's education, it strongly influences the employee's number of years of study (path coefficient 0.50), but has no significant impact on the employee's vocational training. A more surprising result is that it has no significant direct effect either on the type of jobs held by the employee or his earnings. It would be dangerous to generalise from a limited sample of employees working in small firms but it seems that Brazilian society is very discriminatory against people of lower social background, through schooling - it is difficult for members of under-privileged groups to have access to schooling - but the few who do manage to have access to education appear to have fairly equal chances afterwards. Nevertheless, the indirect and total effect of fathers' education on their sons' earnings is 0.188.

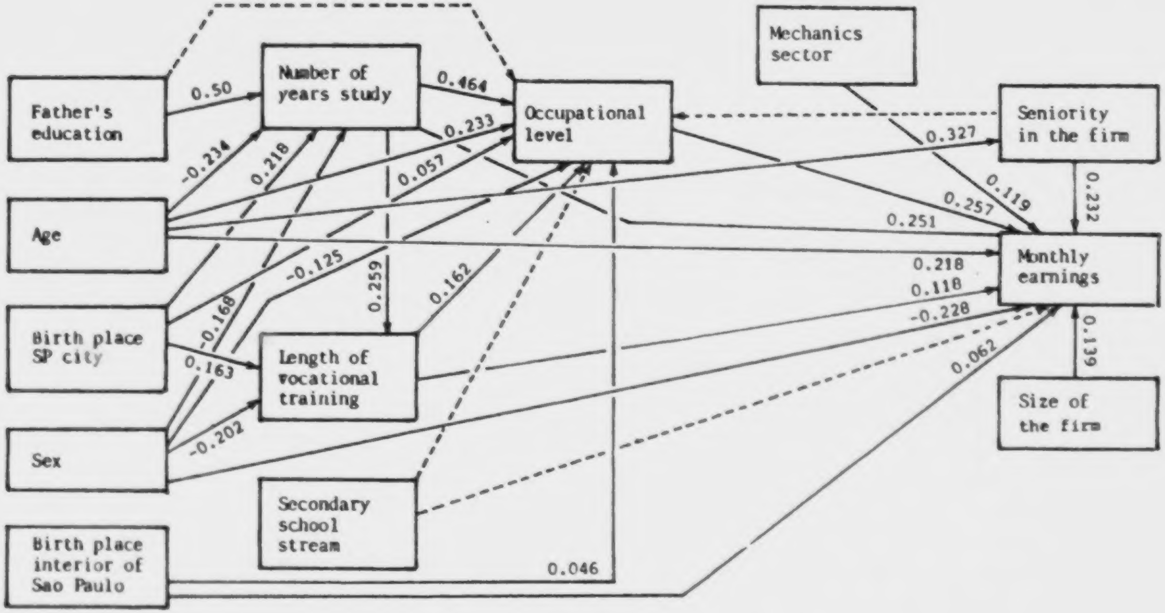
Residential background: As with the father's number of years of study, birthplace has little if any significant direct effect upon salary. We only find that people born in Sao Paulo State have a slightly higher salary than other migrant workers, everything else being equal. Being born in São Paulo itself has no direct influence, but employees born in the city have a much greater chance of being educated (path coefficient = 0.218) and attending vocational training courses (path coefficient = 0.163). The total effect of being born in São Paulo is therefore higher (0.123) than that of being born in the interior of the state. Altogether, the effect of residential background, as that of social origin, is far from being negligible.

Age: As we have seen, age is an influential variable. It has a strong direct influence on salary and an indirect one through occupational level. Older people - that is, more experienced people - are more likely to be in middle level positions as supervisors, foremen, technicians (practical technicians) and have higher salaries. Also for a given position, they receive a higher salary. We find that age is also related to experience in the firm (r = 0.327), which in its turn has an influence on salary.

On the other hand, age has a fairly strong negative effect on the employee's number of years of study. The older the employee, the less likely he is to have followed a long period of studies. This reflects the fact that the educational system has been developing faster in recent years. Everything taken together, age has a significant latent effect on salary (compound path coefficient = 0.255).

Education: The number of years of study is, as we have seen, positively correlated with the father's education and the fact of being born in São Paulo. On the

Figure 1: Path model of salary determination in small firms


Father's education
Age
Birth place SP city
Sex
Birth place interior of Sao Paulo
Number of years study
Length of vocational training
Secondary school stream
Occupational level
Mechanics sector
Seniority in the firm
Monthly earnings
Size of the firm
0.50
0.464
0.233
-0.234
0.218
0.057
-0.125
0.259
0.162
-0.168
0.163
-0.202
0.046
0.327
0.119
0.257
0.251
0.232
0.218
0.118
-0.228
0.062
0.139

other hand, it is negatively influenced by the age and the sex of the employee.

The direct effect of the number of years of study on salary is not as high as one would expect (path coefficient = 0.218). However, it has a very strong influence on the type of job occupied, both directly (path coefficient = 0.464) and indirectly through vocational training. The total effect of the number of years of study on earnings is strong (path compound coefficient = 0.378). With sex of employee, it is the variable which most influences earnings. It is interesting to note that what is important is the number of years of study rather than the type of education. In fact, the type of stream followed in secondary education, whether general or technical, does not appear to have a significant effect, at least when vocational training is taken into account.

Vocational training: The length of vocational training undertaken by employees is positively related with being born in São Paulo and negatively with the employee's sex. Interestingly enough, no significant relation has been found either with the father's education or age. Vocational training has a direct impact on monthly earnings (path coefficient = 0.118) and the occupational level. In order to get into higher positions in the firms, employees need either a good educational level and/or vocational studies. Vocational studies can be a substitute for formal studies in order to become a supervisor and a practical technician but very often it is a complement to general formal education (as in the case of engineers and school-trained technicians). As the higher correlation coefficients between vocational training and occupational level (r = 0.3659), or between vocational training and earnings (r = 0.335) indicate, part of the effect of vocational training is hidden by the fact that it is a complement to formal education.

Experience: In our model, experience is measured by two variables: age, which is a proxy for total experience and seniority in the firm. We have already discussed the age variable. As for seniority in the firm, it is interesting to note that it has a strong influence on earnings (path coefficient = 0.232) but not a significant one on the occupational level. This may be due to the fact that the effect of age is already taken into account, but it may also reflect the fact that employees in the highest occupational levels (engineers and school-trained technicians) have less seniority on average than other employees.

Taking into account the two variables of age and seniority, experience turns out to be quite a significant variable.

Firm variable: Another interesting result of this path model is that all personal variables taken into account, the fact of being employed in one firm rather than in another is not so important. The size of the firm is what counts most (direct path coefficient = 0.139). But once the effect of such variables as sex, education, and training is controlled, there is not much sector effect on salary. We find, for example, that the electronic sector pays higher salaries but tends to use more educated people (r = 0.343), (engineers and technicians) and employ less women. All these variables taken into account for a given job, a given level of education and a given sex, however, they do not give their workers a higher salary. Only the mechanics sector tends to pay its employees a little better than the other sector (path coefficient = 0.119), all variables being held constant. Since in addition it recruits hardly any women and employs more trained people, salaries in the mechanics sector appear even higher.

To conclude this analysis of employees' salary, it seems that in small firms, ascriptive variables (age, sex, birthplace) play a key role in determining both access to different jobs and salary. Human capital variables however are not negligible. Experience - previous experience and experience in the firm, years of study and vocational training play an important role in determining salary. This seems to indicate that the personnel management in small firms is at the same time formal and informal. Informal: people are recruited taking into account their age, sex, experience, their relation with the head of the firm. They are being tested on the job and the best ones, those who at the same time know their job and have acquired the spirit of the firm, remain. They receive some training on the job and outside, and they are paid accordingly. Their faithfulness to the firm is especially rewarded. But promotion opportunities in the firm are limited and there is no promotion above a certain level (foremen) without having some educational and training credentials. The highest positions, and the best paid ones, are filled only by people who have undertaken higher education.

Vocational training has more impact than is normally acknowledged. It has a direct impact on position, particularly for gaining access to middle level jobs, and on salary. It is however very often a complement and not a substitute for regular education and this tends to underestimate its impact on salary.

CHAPTER VIII

THE SMALL FIRM AND ITS MANAGER SYNTHESIS AND CONCLUSION

As a result of this study, it is possible to identify a certain number of common characteristics of small firms, not only in terms of their mode of operation, but also in terms of their manpower management methods and the profile of the heads of these firms. Furthermore, it is also possible to characterise different types according to their industrial activity, the type of product they produce, their size, and so on. In this last chapter, we shall emphasise those factors which are common to small firms, as well as describe the differences and variations between different types of firm. First of all we shall deal with certain characteristics linked to their mode of operation and manpower management. We shall then draw one or two portraits of typical small-firm entrepreneurs, and verify if certain "manager types" are associated with different types of firms. In particular, we shall identify the characteristics of the most successful small-firm heads. Finally, we shall examine the relationship between education, vocational training and the small firm.

8.1 Operation and management of small firms: a few common factors

8.1.1 Dependence

One of the main characteristics of small firms would appear to be their dependence on other firms. Most work only to order and have only one main type of client. Dependency on orders, whether industrial or commercial, leads to constraints which become tighter and tighter in times of crisis, both in terms of prices and delivery time. It would appear that the bigger the client, the harsher these constraints become: a large firm is more likely to cut back than a small one; but an industrial firm would also be harsher than a commercial one. It can be observed that in most cases small firms can plan their production for no more than one or two months in advance. Suppliers of large commercial firms are able to plan their production for longer periods, but industrial firms, whether large or small, appear to impose shorter and shorter delivery delays.

The degree of dependency varies according to the industrial activity and type of product produced. Firms in the mechanical industry nearly all work for large or medium-sized industrial firms, whereas firms involved in the textile industry sell their products to small enterprises, whose conditions do not seem to be as harsh. Firms in the electronics industry come in between these two cases; those producing equipment goods are dependent, for the main part, on industrial firms, whereas those producing durable consumer goods are more often connected to large and medium-sized commercial firms.

In order to mitigate this dependency, as well as to try and counteract the economic crisis, small firms try to a certain extent, to diversify their clientele. In the textile industry, small firms try to sell their goods not only to wholesalers, but also directly to customers; some even have branches which are nothing more than retail shops. In the mechanical sector, small firms often try to work with several larger firms. On the whole, a large number of these small firms prefer to sell to small industrial and commercial establishments rather than to large ones.

8.1.2 Coping with the crisis

Another important characteristic of small firms is the way in which they have survived the crisis which has severely affected the economy of Brazil since 1980. A good number of the firms we surveyed managed to increase their output, their sales revenue and even the number of people they employ during the critical years of 1981-82. A significant number of the firms looked at the period 1982-83 with relative optimism despite the dark predictions made for industry as a whole.

How can this relatively immunity of small firms to the recession be explained?

In the first place it should be admitted that this finding was not entirely a surprise since the firms included in our sample were those that had already survived for two years and therefore were likely to be relatively consolidated and integrated into the overall industrial structure. What is surprising, however, is that this degree of consolidation and integration is much higher than would have been expected; indeed the small firms in our sample have, on average, been in existence for about 14 years. It can reasonably be concluded, therefore, that such firms have developed specific survival strategies which have enabled them to keep afloat and even to be relatively successful even in periods of severe economic crisis.

These strategies are obviously complex and most probably include such elements as the firm head's social and family connections, recourse to a double accounting system, a real one and an official one, and so on, that we were unable to measure in our survey. Nevertheless, the analysis reveals certain pointers about the way in which the firms operate, which probably constitute crucial elements in their survival strategy:

(a) Exploitation of a specific market, such as producing for low income marginal groups: this allows the enterprise to offer fairly low quality products, using reasonably simple technology, at low cost. At the same time, such firms avoid competing with large-scale enterprises which prefer to aim at higher income groups in large urban centres, with more discrimination and a higher purchasing power.

(b) Selling to small or medium-sized firms in the industrial, commercial or service sectors: indeed, as have already indicated, apart from the mechanical industry, there are very few firms that work for large national or foreign enterprises. These large firms have been the most affected by the economic crisis, suffering drastic decreases in production and having to dismiss workers in large numbers.

(c) Maintaining considerable operational flexibility: they can adjust fairly rapidly to market fluctuations and changes in demand. This flexibility, by the way, also constitutes the third major characteristic of small firms.

8.1.3 Considerable operational flexibility

This third main characteristic of small firms exists at various levels:

(a) Firstly, geographic mobility: two out of every three firms in our survey have moved their location at least once.

(b) Secondly, flexibility in the organisation of work: most firms produce in small batches, and in the mechanical sector some even carry out unit production. According to the number of orders received, they adapt their production process, making it assembly-line production whenever necessary; this means, in fact, that they introduce a certain division of labour. In order to have such flexibility, they need a fairly skilled and adaptable work-force.

(c) Finally, flexibility in terms of the work-force used: whenever necessary they hire temporary workers, or subcontract a part of their production to other small and medium-sized firms, or call on external services for accounting, maintenance and advertising. Last but not least, in the textile industry, a lot of use is made of home workers. In all cases this flexible and adaptable work-force allows them to respond rapidly to a seasonable demand, without obliging them to recruit fixed personnel; it also allows them to cut their labour and production costs.

This flexibility is very much valued by the firm heads. Many of them in fact own or manage several small firms: they prefer to have several small firms rather than to expand any one firm to a medium or large size.

The most flexible firms are probably to be found in the textile industry, due to the way in which they use their labour. Since the work is not of a highly-skilled nature, extensive use can be made of home workers. Also, a considerable number of firms in this sector subcontract part of their production to other small and micro firms. Again, this is done in an effort to reduce the number of permanent workers and labour costs. On the other hand, in order to follow fashion, they frequently have to change their products. This does not mean that they create fashions, but only that they can rapidly copy and adapt those models available for the internal market. This adaptation/modification of products is often done within the firm by the manager himself. Another proof of their flexibility and also of their vitality is the fact that they renew their equipment not only to enlarge the firm but also with a view to modernising it. On the whole, these firms project a fairly dynamic image; and the larger the firms, the more dynamic they appear to be, i.e. the more capable they would seem to be of creating and adapting their own products. The largest firms have a more varied line of products and a greater tendency to explore new markets: selling outside São Paulo, and exporting (although only a few actually export).

In the mechanics industry, firms have much less operational flexibility. They employ a more skilled manpower force which they try to maintain despite variations in the level of production activity. For this very same reason, they do not use home workers and rarely subcontract; in cases where they do subcontract, it affects only a small part of their production. At the same time it must be emphasised that firms in the mechanics industry deal with a market which changes relatively little in terms of the type of products or services required (there is much less innovation in mechanics for example than in electronics). Finally, as noted above, these firms are much more dependent than

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others on large industrial firms to sell their product. Being less flexible, they are also perhaps less dynamic. Most of them produce only one or two products, which, in 70 per cent of cases are based on a model provided by their client firm. In the rare cases where the product was conceived by the firm itself, this had been undertaken by a previous manager, or by someone from outside the firm. On the whole, more than half of the small firms in the mechanics industry have never modified their product since their creation, and the others have only done so on rare occasions. This relative lack of dynamism is perhaps due to the characteristics of the client firms and of the mechanics industry in general; but it might also be linked to the profile of the heads of these firms, and in particular to their generally low level of education which does not allow them to design new products or even modify or update their existing models.

In the electronics sector, small firms appear less flexible than those in the textile sector. They do not make use of home or temporary workers, and they only subcontract a little of their production to other firms. Nevertheless, as the production methods are not very complex (they basically deal with assembling parts produced outside the firm, and in the majority of those firms producing consumer durables the production is done manually), they use a semi-skilled manpower which can be recruited and dismissed easily. On the other hand, they are probably the most dynamic firms in our sample: the majority of them develop their own products, even if it is only a question of copying models which already exist on the market. They modify their product regularly, renew their equipment, recruit technicians, and the like. Using these precise criteria, the most dynamic firms are those which produce electronics equipment, or parts for such equipment. Those producing consumer goods, on the other hand, appear to be more eager to conquer new markets, to sell to other states and even to export than to improve their products, presumably because they aim at a relatively poor and undemanding clientele.

To complete this panorama of the way small firms operate, it is of interest to examine the characteristics of the most efficient firms in our sample. Obviously, the first question which arises is: what is meant by an efficient firm? Traditionally one looks at the firm's profits, but in our case it did not prove possible to obtain trustworthy information on the subject. We thus retained several indicators, keeping in mind that none of these is entirely satisfactory nor can any one indicator be interpreted on its own. These indicators are: the firm's turnover, the increase of this turnover between 1981 and 1982, the level of productivity(1) and, last but not least, a composite indicator of the dynamism of the firm.(2) The significant correlation coefficients between these factors and other characteristics of the firm are given in Table 8.1.

In all three industries, the most efficient firms (namely those with the highest turnover and with the highest level of productivity) are often the largest ones whether in terms of the number of employees or registered capital. They are also those with the highest capital intensity,(3) and generally the most dynamic.

There are, however, interesting differences between industries. In the textile and electronics industries, for example, productivity is linked to the amount and intensity of capital but has little to do with the number of employees. In these two industries, a very small firm can reach a relatively high level of productivity if it

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1. In the absence of reliable data on value added we computed the level of productivity by dividing the firm's turnover by the number of permanent employees.

2. This indicator was constructed combining such variables as whether the firm conceives/adapts its own products, often, rarely or never modifies its product, its equipment, its production methods, and whether or not the firm exports its products.

3. This was computed as the amount of registered capital per permanent employee.

makes use of temporary or home workers (in the textile industry), or if it only covers part of the production process (in the electronics sector). In the mechanical sector, on the other hand, the most productive firms (which are also those with the highest productivity level in our sample), are those with the highest number of employees (50-99 employees). The larger the firm the more likely it is to organise "large-batch" production, buy new equipment and make the best use of it, and finally to have a higher level of productivity. It is also found that while the turnover is positively related to the capital intensity in the two other industries, this is not the case in mechanics. This reflects the fact that if little investment is needed at the start in the textile and electronic industries which are very labour intensive, firms in the mechanical industry (particularly those producing equipment) and even the smallest ones, need a minimum of equipment at the start. As the firm develops in terms of the number of employees and turnover, the amount of capital per employee increases very little, and in some cases it decreases. Finally, there is one further variation: contrary to what is observed in other industries, in electronics particularly amongst firms producing consumer durables, the firms with the highest level of productivity are neither the most dynamic nor those which frequently modify their product. They are, in fact, those which produce cheap, low-quality products for a specific clientele.

In short, in the textile industry, the most productive firms are those which have a higher capital and capitalistic intensity than others. These firms are more mechanised, they conceive their own products and adapt them to fashion trends. In electronics, the firms with the highest productivity level are those which produce capital goods. They modify their product regularly in order to follow changing techniques and to better serve their client firms. In spite of this, or perhaps because of this, such firms do not have a very high capital per employee. The firms producing consumer durables on the other hand, rarely change or modify their products; they are more capital intensive and their productivity

Table 8.1

Correlation matrix between firms' variables

Sector	Increase in turnover	Turnover	Level of productivity	Capital intensity	Dynamism
Clothing					
Increase in turnover	1	0.382	0.369		0.440
Capital	0.298	0.863	0.520	0.691	-
Productivity	0.369	0.576	1	0.720	0.399
Capital intensity	-	0.470	0.720	1	-
Dynamism	0.440	0.388	0.399	-	1
Responsible for only part of production process	-	-	0.350	-	-
Size	-	0.719	-	-	0.330
Electronics					
Increase in turnover	1	0.443	-	-	-
Capital	-	0.451	0.355	0.853	-
Productivity	-	0.398	-	0.433	-
Capital intensity	-	-	0.433	-	-
Dynamism	-	-	-	-	1
Responsible for only part of production process	-	0.372	-	-	-
Size	0.570	0.791	-	-	-
Mechanical goods					
Increase in turnover	1	0.418	0.590	-	-
Capital	0.314	0.667	0.458	0.691	0.333
Productivity	0.590	0.708	1	0.431	0.321
Capital intensity	-	-	0.431	1	-
Dynamism	-	0.367	0.321	0.355	1
Production of capital goods	-	0.285	0.452	-	-
Size	0.355	0.765	0.590	-	0.335
All sectors					
Increase in turnover	1	0.424	0.292	-	0.200
Capital	0.213	0.593	0.352	-	-
Productivity	0.292	0.524	1	-	0.263
Capital intensity	-	0.210	0.399	1	-
Size	0.373	0.753	0.201	-	0.243
Clothing	-	-	-	0.179	-
Electonics	-	-	-		0.465
Mecanical goods	-	-	-	0.209	-0.437
Dynamism	0.200	0.265	0.263	-	1

Note: Correlation coefficient significant at 5 per cent level.

increases with their capital intensity. The vitality of such firms consists in their searching for new markets, outside São Paulo and even abroad.

In the mechanical sector, productivity increases with the size of the firm, but again it is necessary to distinguish here between those firms which produce equipment, at a relatively high level of productivity and capital intensity, and those which provide services and hence have a lower productivity and are less capital intensive.

8.2 Personnel management in small firms

In personnel management, small firms are noted for their flexible and informal relations with their work-force. This becomes evident when an analysis is made of the trend in the employment level of these firms, their occupational structure and their recruitment and salary policies.

8.2.1 Evolution of employment

We have already mentioned the fact that firms in the textile sector make considerable use of home workers and that all firms, whatever their sector, call on external services for very specialised jobs. This allows a flexible work force. Another form of flexibility consists of being able to adapt rapidly the number of employees to the volume of production. When production decreases, so does the number of employees. If it increases, the number of employees increases (r = .747). However, here too, there are differences between sectors. In electronics, manpower follows the same movement as production: firms do not use temporary manpower, and they have no difficulties in recruiting employees.

In the textile industry, some firms cut down their number of employees even if production increases, whereas others maintain the same numbers of employees even when their production decreases. It is basically the number of temporary and home workers which is affected by such changes in production. Finally, in mechanics there are a considerable number of firms that maintain the same number of employees, even when production decreases: firm heads probably prefer to retain their skilled workers regardless of fluctuations in production.

8.2.2 Employment structure

Flexibility can also be noted in the employment structure of small firms. Due to their small size and low capital intensity, they organise their work differently according to the amount of orders, and employees are called upon to undertake a variety of tasks. This is also made possible by the very important involvement of partners in the management of the firm. Nearly all partners actually work in the firm, generally as a team of two. One of them acts as the technical manager, and the other as the administrator. The administrator is responsible for all the management tasks and the supervision of sales; he also manages personnel, including the selection and recruitment of workers. Recourse to external services in this area is limited to an accountant and, more rarely, to a lawyer or other legal services. The technical manager is the one who designs and develops new products (most of the time copying and adapting existing models). He also supervises production if he is not participating directly in it. He also participates in the selection of the personnel with whom he works.

Obviously this division of tasks is neither rigid nor clearly defined. Many of the small entrepreneurs are in fact "eclectic", participating in all areas of the firm's activities, and checking personnally on how things are going.

These multi-faceted roles account for the fact that two-thirds of the firms do not employ technical personnel (engineers or technicians) and the part played by administration is often undertaken by a member of the family. The division of labour becomes more and more intensive as the firm grows: firms develop special "departments" and managers delegate responsibilities such as personnel management, designing and modifying products and finally, market sales.

In firms with over 50 employees (slightly less in those in electronics), it is generally felt necessary to delegate responsibilities; the personnel directly involved in production diminishes, and recruitment of technicians or engineers becomes more frequent; at the operative level jobs become more specialised and routine in nature and the proportion of skilled workers decreases. Here again there are significant differences between different industries and the type of products they make. Only firms in the electronics industry, and particularly those producing capital goods (technologically-speaking the most sophisticated products included in our sample), make an extensive use of technicians and engineers. On the other hand, such firms employ only a few skilled workers. In the clothing and mechanical industry it is different, in that 80 per cent of firms in the clothing industry and 70 per cent of firms in the latter do not employ any technicians or engineers. Those which do are generally the larger and more productive firms (mechanics), or those which adapt and create their own products (clothing). As far as the use of skilled workers is concerned, there seems to be a considerable number in the mechanical sector whatever the size of the firm; whereas in the clothing industry they reduce in number as the firm grows and mechanisation increases.

8.3 Recruitment of personnel and earnings

In small firms in general, recruitment methods are very informal. Posts, particularly for semi-skilled workers, are advertised at the firm door, or applications are submitted on the recommendation of a friend of the manager, another employee, etc. More often than not, it is one of the partners who selects employees after having interviewed them and tested their skills. As the firm's supervisory staff is limited, the manager must be able to trust his personnel. Also, good relations between employees and the boss as well as among the employees themselves are of prime importance in ensuring a good atmosphere for work. When recruiting it is thus very important:

(a) on the one hand, to ensure that the applicant has the requisite technical knowledge for a particular post. This is done by means of a practical test, and also by insisting on several years' experience in a similar job;

(b) on the other hand, to consider whether, as regards social behaviour, the person will be able to integrate easily into the firm.

Thus, the criteria used for recruitment are: sex, previous experience in other jobs, good references and a recommendation from someone who knows the candidate and the firm (a friend of the boss, or other employees). Education and vocational training seem to play a limited role (except in the mechanical industry). One out of every two firm heads declares that education is of little importance when recruiting skilled or semi-skilled workers and two out of three say that vocational training is of no importance. The survey undertaken on the workers, however, shows that education plays a much more important role than the firm heads like to admit. Semi-skilled workers have an average of five years' study behind them, and skilled workers six. In periods of high unemployment, firms can recruit people with a higher level of education than is actually needed for the job. Education is not a decisive criterion for recruitment, but it can act as an indicator for the preliminary screening of candidates. The final selection is made on the basis of other criteria: practical experience, and behaviour compatible with the firm. Contrary to what may be expected, small firms do not seem to constitute an easy outlet for school leavers, judging from our sample of workers (who may have been selected by the manager because they are stable, "reliable" workers). Prior to entering their present firm, the workers in our sample had worked, on average, for ten years in different jobs of varying lengths of time. Within the firm promotion opportunities are limited: skilled workers seem to be recruited from outside and not by promoting semi-skilled workers. Jobs as supervisor or foreman are limited, and more and more technicians with higher educational levels are recruited from outside. Salaries, however, contrary to what may be imagined, are not much lower than the average for the industry. A family atmosphere, variety of tasks, decent salaries, all help to explain why small firms do not seem to suffer from a high turnover of personnel.

These observations are valid for all the firms in our sample, but we note that some have a more empirical and more family-type method of management than others. This probably depends on the size of the firm, its work organisation, and also on the characteristics of the firm's head, such as his social and professional background.

In the mechanical industry, for example, where there is a predominance of skilled workers and where the head of the firm himself has had a long experience in the trade as a skilled worker before setting up his own business, management is more empirical. The choice of a good worker is very important. The main criteria for selection are: a recommendation, previous experience in other firms, and sex of employee (no women). Educational level is of little importance, but vocational training is. More than half the skilled workers have undergone some such training. The fact that the new recruits have already worked for some time in similar jobs, and that they have undergone vocational training, means that the firm does not need to train its personnel. In cases where training is required, it is the firm's head who ensures this training. This is therefore an informal type of management: the entrepreneur recruits, and even trains all his employees; he also often works with them. The firm's hierarchy has very few levels, the opportunities for promotion are few but, at the same time, there is a relative security of employment. Above all, these firms pay fairly well. On average, they pay five or six times the minimum salary, which is better than in other industries. The larger the firm, the higher are the salaries. Table 8.2 presents the results of a regression analysis of the salaries of workers in the clothing, electronics and mechanical goods industries. From the analysis we note that the size of the firm alone accounts for 20.7 per cent of the variance in salaries; indeed, we note that productivity increases with the size of the firm. Other important variables reveal the priorities of firm heads: the sex of the employee, the vocational

Table B.2

Multiple regression analysis of the determinants of employees' earnings by sector of activity
Log of monthly earnings

Dependent variable	Multiple R	R square	RSq change	Simple R	B	Beta
Clothing						
Months at this firm	0.45465	0.20671	0.20671	0.45465	0.00221	0.45233
Strata (size)	0.61128	0.37366	0.16695	0.35048	0.10568	0.34474
Experience before entering this firm	0.66324	0.43989	0.06623	0.24510	0.00055	0.23711
Employee's sex	0.70615	0.49865	0.05876	-0.36610	-0.14535	-0.24652
Hours completed (vocational training)	0.73079	0.53405	0.03540	0.24814	0.00015	0.16901
Employee's number of years of study	0.74017	0.54785	*	0.25131	*	*
(Constant)					1.680285	
	N = 103; R^2 = 0.548; Adjusted R^2 = 0.519					
Electronics						
Employee's number of years	0.51454	0.26475	0.26475	0.51454	0.05058	0.61240
Months at this firm	0.66483	0.44200	0.17725	0.31787	0.00230	0.51956
Experience before entering this firm	0.79028	0.62455	0.18255	0.22921	0.001119	0.41657
Strata (size)	0.80091	0.64146	0.01691	0.19785	0.06520	0.13598
Employee's sex	0.80850	0.65367	*	-0.41935	*	*
(Constant)					1.434476	
	N = 80; R^2 = 0.634; Adjusted R^2 = 0.610					
Mechanical goods						
Strata (size)	0.45457	0.20663	0.20663	0.45457	0.1308016	0.40382
Employee's sex	0.54854	0.30090	0.09427	-0.27421	-0.3931673	-0.21035
Months at this firm	0.60307	0.36369	0.06279	0.31054	0.00180	0.42007
Hours completed (vocational training)	0.67666	0.45787	0.09418	0.29940	0.00006	0.29469
Experience before entering this firm	0.70379	0.49532	0.03745	0.11763	0.00064	0.24480
Employee's number of years of study	0.71624	0.51300	*	0.15962	*	*
(Constant)					1.956445	
	N = 88; R^2 = 0.513; Adjusted R^2 = 0.477					

* Not significant at 5 per cent level.

training he has undergone, and finally seniority (length of service); these variables account respectively for 9.4 per cent, 9.4 per cent and 6.3 per cent of the variance in salaries. The impact of the length of general education is negligible. What is remunerated above all is vocational training and the experience acquired: both are a measure not only of the employee's level of knowledge but also his fidelity to the firm. Six variables (size of the firm, sex of employee, his/her vocational training, previous experience and experience within the firm, and educational level) explain 51.3 per cent of the total variance in salaries.

In the electronics industry, salaries are nearly as high, but personnel management is less empirical. Manpower is often composed of semi-skilled workers. Since the jobs do not require any specific skills, and the number of foremen and technicians is higher, the selection of workers is less important than in the mechanical industry. Recruitment is thus much more impersonal: an advertisement at the firm door. Employees are not selected by the head, but often by a foreman/supervisor. Selection criteria are much more flexible and none is imperative. References, sex of employee,(1) previous experience and educational level are of some importance, but less than in the mechanical industry. We note, however, that all workers have five or six years' study and quite a few years of experience behind them before entering the firm. Vocational training is not a criterium for recruitment; the firm itself ensures this training, which is generally an on-the-job training done by senior workers. Rather than a real training to come qualified, it is more a question of adaption and practice on the job. Technicians, having an important post within the firm, have different recruitment procedures. It is the manager himself who recruits them, on recommendation, most of the time from outside the firm. Education and vocational training are essential criteria in these cases.

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1. Women are taken for the semi-skilled jobs and men for the skilled jobs.

As far as can be judged by the profile of the technicians employed, firms apparently insist on a technical secondary education diploma. They also seem to prefer some previous professional background. Salaries are relatively high, as we have already mentioned. Five variables account for 65.3 per cent of the salary variance. Firstly, the total number of years of formal education, which accounts for 26.4 per cent of the variation. This is followed by previous experience (18.2 per cent) and seniority within the firm (17.7 per cent). Size of firm has little influence, explaining only 1.7 per cent of the variance, and sex and vocational training have no significant influence. These findings may reflect the fact that there are more technicians/engineers employed in the electronics industry than in the two other industries. They also reflect the fact that manpower management is based more on a marked hierarchy between semi-skilled workers at the bottom, and technicians, engineers and heads higher up. As one goes higher up this pyramid, educational levels and salaries increase substantially.

In a way, firms in the textile industry constitute a third type of management of small firms. They differ from those in the other two industries by the fact that neither education nor vocational training has any great influence on the recruitment of employees. As a result, textile workers have a low educational level, that is much lower than in other industries: five years' study on average, and only very few of them have undergone some sort of vocational training. Firms in this industry seem to insist only on that fact that their workers should be women with a certain amount of experience in this type of work, and that they are able to present some references. Since it basically concerns semi-skilled rather than skilled jobs, recruitment methods are very impersonal: again, advertising at the firm door. Nevertheless, it is the head who chooses his employees. In view of the characteristics of their workforce (women with low educational levels), firms in this industry get away with paying low salaries. Conversely, the fact that they cannot pay higher salaries might be the reason why they employ women and home workers, who accept such salary levels. Indeed, it is found that the larger firms (namely those which are more productive and which pay their workers better), have a tendency to employ fewer women. In any case, all of them place importance on previous experience when recruiting. The salary variance can partly be explained by seniority within the firm (20.6 per cent), followed by the size of the firm (16.7 per cent), previous experience (6.6 per cent) and sex of employee (5.8 per cent) - women being paid less than men. The number of years of schooling does not have a significant influence and vocational training only has a small impact (Table 8.3). The most experienced workers are the best paid: they are in fact quite sought after, since some firms complain of recruitment problems. They can be promoted to become team supervisors, but rarely above that level. Even in this case, they continue producing despite having these extra supervisory responsibilities; nevertheless they earn a higher salary.

8.4 The firm and its manager

Is there a typical profile of the head of a small firm? To what extent do the specific characteristics of a manager affect the functioning of his firm? We have seen how partners are involved in the management of their firm, one looking after the commercial and administrative side, the other in charge of the technical aspects of the business such as the design and modification of products and supervision of production. Their level of preparation and professional experience inevitably influences the running of the firm.

Most managers feel themselves to be sufficiently prepared or trained to carry out their functions. Very few of them acknowledge any limitations either in terms of knowledge or training and fewer still would like to benefit from the assistance of specialised institutions established for that purpose. In fact, only a small number of them know of the existence of such institutions.

This relatively high self-image might be due to the fact that small firm managers tend to be more educated than the average Brazilian. Most of them have completed secondary education and many have followed some vocational

Table 8.3

Significant correlation coefficients between selected variables of firms' performance and their entrepreneurs' characteristics

	Turnover	Size	Dynamism	Productivity	Capital	Increase in turnover
Entrepreneur's number of years of study	0.346	0.345	0.290	0.165	-	0.204
Father's number of years of study	0.441	0.366	0.427	0.163	0.332	-
Father's occupational status	0.428	0.419	0.381	0.180	0.324	-
Length of head's vocational training	-	-	-	-	0.194	-
First job	-	-	0.211	0.162	-	-
Most important job	0.216	0.237	0.279	-	-	-

courses relevant to their actual functions. In addition they have accumulated a good deal of experience first by working as an employee in another firm - nearly all of them have had such experience and worked as an employee for an average of 15 years before starting their own firm - and second by working for 10 years on average as an entrepreneur.

Their professional experience is particularly interesting. There are some differences according to the industry in which they work but they all started working at a very early age (14-15 years) and in low status occupations either in the industrial or in the service sector. They have slowly ascended the occupational ladder and then decided to set up on their own. This they did when they reached a reasonably skilled or prestigious occupation such as highly skilled worker (tool makers in mechanics, for example), technician, manager or foreman generally in the same industry as the one in which they started their first business or in a related one.

Most say that they started their own business using their own resources which were either accumulated in previous jobs or obtained by selling some personal property. Very few indicate that they have benefited from family help or connections.

It is important to underline that a good majority of the firms' heads come from family backgrounds that make their professional change relatively easy. Most of them come from the small urban middle class; they are the sons of self-employed workers, small owners, managers, foremen and the like. The participation of both foreign migrants and sons of foreign migrants is much higher than in the rest of the population. Obviously it cannot be asserted that their family origin is directly responsible for the fact that they established themselves as entrepreneurs; nonetheless, one should not underestimate the influence that their family background may have had in forming their set of values, in allowing them to establish various contacts and professional connections and on their having access to certain occupations which helped them to set up on their own at a later date.

Can one go beyond this typical profile of a firm head and try to identify whether the dynamic nature of the firm is related to specific characteristics of its head? Is there, for example, a link between the level of training of a firm's head and the performance of his firm? In order to measure this, we calculated the correlation ratios between the different characteristics of the firm's head: educational level, vocational training, social background, father's education, previous employment, and the various indicators of the firm's efficiency already mentioned. The results obtained are mixed: they show how difficult it is to measure the efficiency of a firm and relate it to the determining characteristics of its head. Everything depends, first and foremost, on the efficiency indicator selected. We thus note that the education of the firm's head is significantly correlated to the size of the firm, its turnover ($r = 0.346$), and its character, but that it is only slightly correlated to the firm's productivity ($m = 0.165$). This is perhaps due to the fact that we have information on only one of the partners, the one not generally in charge of the technical aspects, organisation of production, design of the products, etc. In order to measure the impact of education and vocational training, we should perhaps have obtained information on the profile of the other manager. A second, and rather unexpected finding is that there is a significantly stronger correlation with the educational level and professional status of the manager's parents, particularly of the father, rather than his own educational level. This appears to contradict what the majority of the firm's heads say, namely that they were neither helped nor influenced by their father. There are several possible explanations - first, the firm may have been created by the father. As its creator, he would have given the firm its mark, defined its organisation, products, and other features. This is perhaps a good explanation for certain firms in the mechanical and even the electronic industries (35 and 25 per cent of the heads questions declare having inherited the firm), but it is certainly not valid for all.

The second possible explanation is that the father, through his example and experience, has not only instilled in his son the desire to set up a business of his own, to take risks, initiatives, and the like, but also passed on his knowledge and know-how. The fathers of 60 per cent of the firms' heads were independent workers, managers of small commercial or industrial enterprises. They were able themselves, or through their relations, to teach their sons how to create a firm, obtain credit, find buyers, do the accounting and so on. The better educated the father, the better he transmitted the required knowledge, skills and values to his son. This hypothesis is corroborated by the strong correlation noted between the social background of the father and the turnover of the firm on the one hand, and its dynamic nature on the other. Wherever the father himself was at the head of a small or medium-sized firm in the same or another sector, the richer was the knowledge passed on to his son. Family assistance may also have taken other forms, such as financial aid. According to their answers, this was rarely the case. Most probably family aid consisted in helping the future entrepreneur find a job which would enable him to acquire the necessary knowledge for his present position and to accumulate enough capital to start his own business.

Here too, there are variations between industries. In the electronics industry, the education of the firm's head seems to have little influence on the performance of the firm, but it is significant that it is in this industry that the least variation in the education levels of firms' heads is found. Most of them have higher education diplomas, or at least secondary and technical education (with or without vocational training). The following factors have the most influence: social background (a considerable number are sons of heads of small or medium-sized firms) and their previous professional experience (generally in large or medium-sized firms).

In the clothing industry, there are greater variations in the level of education of the firm heads, and it is precisely those with the highest educational level and those who have undergone vocational training, who are at the head of the largest and most dynamic firms

- particularly those firms which have managed to keep their sales revenues stable and even increase them. It is also these firms' heads who tend more to recruit and employ technicians. The educational level of their parents is much lower compared to those in the electronics industry, but this does not mean that their social background does not play a significant role. There is in fact a strong correlation between the foreign origin of the father, his occupational status and the firm's size, capital and dynamism. The heads of these small firms come from families of small tradesmen, and this can but help them in their career.

Finally, in the mechanics industry firms' heads have a much lower level of education: 9.5 years on average (8 for those producing equipment goods). Most of them, however, have undergone some sort of vocational training; this is the case not only for those with a low educational level, but also for those (generally the younger ones) who have undertaken more advanced studies (technical secondary schools, university). The better educated the firm's head, the more likely he is to be at the top of an important firm in terms of size and turnover, and also to modify his firm's equipment, or to look for markets abroad. Family influence would also seem to be of considerable importance. A little more than a third of firms' heads at the time of the survey had inherited their firm and more often than not it was their predecessors who defined the product, the working procedures, etc. It is, therefore, not surprising to find a strong correlation between the father's education, the turnover, the level of productivity or the registered capital. Others, coming from more modest families - semi-skilled workers, small firms' heads - have worked in different jobs, notably in mechanics and it was in such jobs that they acquired their "know-how", and technical skills and were able to make contacts with future suppliers or clients.

What conclusions can we draw about the relationships between education, vocational training and the small firm?

For the firm head, we note that his training is a complex process, made up of formal education, non-formal education (e.g. vocational training), and informal education (such as industrial and entrepreneurial culture obtained through family education and professional experience). A good firm head needs knowledge in several fields: management, administration, accounting techniques, etc.. Formal education develops their basic knowledge, sometimes even vocational and technical skills (at university, and in technical secondary education). A high educational level and a good basic training facilitates possibilities of specialisation, and helps keep the firms' heads up-to-date in different fields through specialised training courses or personal reading. It also enables them to readjust and recycle themselves. We note that education and vocational training are both complementary and supplementary: everything depends, naturally, on the industry and the availability or not of courses in certain fields; it affects not only those with an average educational level (incomplete secondary), but also those with university diplomas who have undergone vocational training. Neither formal education nor professional education alone can develop the qualities necessary for a good head of firm: flair, dynamism, initiative, etc.. These qualities are more frequently acquired through family background, developed through practice and professional experience, and encouraged by society, the economic situation, possibilities of access to credit, etc..

Taking a look now at the employees of small firms, and disregarding the differences which exist between industries, we note that:

- complete primary education (4 years) is the minimum educational level found for semi-skilled workers. In addition, a significant relationship is found between the employee's occupational level and his or her number of years of schooling. In other words, the highest posts are filled by people having had more formal education;
- half of the workers, those at the semi-skilled level, have followed and completed a vocational

> training course, generally related to their present job. Again we observe a positive correlation between the employee's occupational level and the training he or she followed. That is to say the higher the position - and therefore the higher the educational level of the person concerned - the higher the number of vocational courses followed and the longer the length of training. It is also more likely that the course followed is relevant to the person's job.

In short, the data we collected show that there is a relationship between education, training and working in small firms. Thus, as is the case in bigger firms, education is one of the criteria affecting access to the highest and best-paid positions in a firm, but it is not the only criterion - experience and various indicators of the worker's reliability also play an important role.

Who trains the workforce employed in small firms?

According to employers, the best training is one which is practical or on the job either in the firms or at home (for women in the clothing industry). Nevertheless, as a good number of workers have completed a vocational training course, it is possible to identify the training institutions that have provided the training.

SENAI and private courses (including correspondence courses) seem to be equally called upon for the training of skilled or semi-skilled workers in small firms. Not surprisingly it is in the mechanical firms that workers, particularly skilled workers, have been trained more often by SENAI - this is one of SENAI's traditional areas for training. Public and private technical schools are gaining ground among engineers and technicians although most of them have been trained in private schools or private courses.

The amount of training organised by the firms is quite insignificant - apart from practical and on-the-job training. Since most employees have worked only in small firms, it is not surprising to find that relatively few of them have followed organised in-plant training.

ANNEX A

PART I

Education, Training and Employment: Industries in Brazil

Table I.1

Manufacturing industry 1975: Share of the State of São Paulo in relation to Brazil and the municipal district of the Capital in relation to the State, in the total number of establishments, total employment, the gross industrial output and value added by specific industries (in %)

Branches	Share of São Paulo in Brazil				Share of the Municipal District of the Capital in the State of São Paulo			
	EST	EMP	IGO	IVA	EST	EMP	IGO	IVA
10 - Non-metallic minerals	22.0	37.4	45.4	45.0	14.0	26.4	32.4	29.9
11 - Metallurgy	48.4	56.5	53.7	55.7	53.7	49.8	38.9	45.4
12 - Mechanical goods	56.5	60.8	70.0	68.1	49.5	40.7	43.5	45.8
13 - Electrical and communication equipment	62.7	71.7	74.7	71.7	67.4	62.7	51.5	57.4
14 - Transport equipment	41.2	63.7	81.7	73.5	44.2	37.2	18.4	34.3
15 - Timber	12.7	13.5	20.1	19.2	27.7	33.4	37.5	35.9
16 - Furniture	30.1	43.0	53.2	53.1	44.9	44.0	46.0	47.7
17 - Paper and cardboard	53.4	56.0	61.2	61.8	62.1	54.7	45.9	43.2
18 - Rubber	40.1	69.6	82.9	82.0	54.5	41.4	31.0	31.6
19 - Leather and hides	22.1	26.0	28.5	26.7	27.9	22.5	18.0	21.2
20 - Chemical goods	44.6	51.9	54.3	57.6	36.9	26.8	14.4	17.0
21 - Pharmaceutical and veterinary products	45.8	54.7	66.6	66.0	70.5	71.0	70.8	71.4
22 - Perfumery, soap and candles	33.4	49.7	66.4	69.9	63.4	66.9	62.2	64.0
23 - Plastic products	67.7	64.4	61.8	61.3	70.0	72.7	69.5	70.5
24 - Textiles	56.3	53.1	55.3	56.5	49.8	45.2	51.2	53.6
25 - Clothing, footwear and woven goods	48.6	42.7	51.3	48.1	69.0	63.2	71.2	67.9
26 - Foodstuffs	22.9	28.5	38.7	38.3	24.7	30.6	27.5	28.5
27 - Beverages	21.0	29.1	39.2	36.6	5.6	23.4	33.2	37.1
28 - Tobacco	3.9	13.1	22.7	29.7	62.5	94.6	97.4	97.4
29 - Publishing and graphics	40.4	42.7	50.9	49.4	55.0	73.5	85.6	87.1
30 - Miscellaneous	46.0	59.9	67.0	68.9	66.0	68.8	67.7	67.1
Total	32.4	47.6	56.0	55.9	42.6	46.1	37.0	44.0

Source: (unadjusted data): F. IBGE - Industrial Census for 1975.

EST = establishment; EMP = total employment; IGO = gross output (value of sale or transfer in a factory of the total amount of articles produced, and of receipts for industrial services rendered to other establishments, of the same enterprise or to third parties, excluding taxes and duties on such goods and services); IVA = industrial value added (value added through industrial processing in the establishment to the value of the raw materials, components and materials consumed in production).

Table 1.2

Brazil - 1950-75: Share of some specific industries in overall employment and in the gross industrial output (in %)

Industries	Employment				Gross output			
	1950(*)	1960	1970	1975	1950	1960	1970	1975
Metallurgy	8.2	9.9	10.1	11.6	7.6	10.5	12.5	13.3
Mechanical goods	2.0	3.5	6.8	10.3	1.6	2.8	5.7	7.9
Electrical goods	1.3	3.3	4.4	4.6	1.4	4.0	4.7	5.0
Transport	1.4	4.6	6.0	5.8	2.3	6.8	8.2	9.0
Chemical goods	5.4	4.3	3.9	3.3	8.5	9.0	10.9	15.3
Subtotal	18.3	25.6	31.2	35.6	21.4	33.1	42.0	50.5
Textiles	28.2	18.6	13.0	8.7	18.7	12.5	9.3	6.7
Clothing and footwear	6.0	5.6	6.2	7.9	4.3	3.4	3.4	3.4
Foodstuffs	16.3	15.1	14.1	13.1	32.0	24.1	20.2	16.2
Beverages	2.6	2.5	2.2	1.4	3.1	2.4	1.9	1.3
Subtotal	53.1	41.8	35.5	31.1	58.1	42.4	34.8	27.6
Other branches	28.6	32.6	33.3	33.3	20.5	24.5	23.2	21.9
Total industry	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Source: (unadjusted data): F. IBGE - Industrial Censuses for 1950, 1960, 1970 and 1975.

* The 1950 data refer to wage-earning staff.

Table I.3

Brazil - 1960-83: Annual rates of inflation

Years	Rates
1960	30.7
1961	47.7
1962	51.3
1963	81.3
1964	91.9
1965	34.5
1966	38.8
1967	24.3
1968	25.4
1969	20.2
1970	19.2
1971	19.8
1972	15.5
1973	15.7
1974	34.5
1975	29.4
1976	46.3
1977	38.7
1978	40.8
1979	77.2
1980	110.3
1981	95.2
1982	99.7
1983	211.0

Source: FGV - Fundação Getúlio Vargas (cf. SENAI-SP, Boletim de indicadores Conjunturais no. 10 1983.

Table I.4

Brazil: Composition of export and import schedule (*) (in %)

Year	Exports			Imports			
	Basic products	Semi-finished products	Finished products	Consumer goods	Raw materials	Petroleum and petroleum products	Machines and equipment
1972	66.4	10.0	22.6	9.8	37.0	11.1	41.0
1973	65.0	9.3	23.1	10.5	41.4	12.4	34.6
1974	57.6	11.5	28.5	6.9	44.2	23.4	25.3
1975	57.9	9.8	29.8	6.7	35.7	25.4	32.2
1976	60.5	8.3	27.4	7.0	32.8	31.0	29.2
1977	57.4	8.6	31.7	7.7	32.5	33.9	25.7
1978	47.2	11.2	40.2	8.1	33.1	32.8	29.3
1979	43.0	12.4	43.6	8.7	32.9	37.5	20.8
1980	43.4	11.7	44.8	5.7	30.8	44.4	19.1
1981	38.3	9.1	51.0	4.5	26.0	51.3	18.2
1982	40.3	7.0	51.3	5.2	24.1	53.9	16.8

Source: Banco do Brasil - CACEX; Ministry of the Treasury; Fundaçao Getúlio Vargas

* Share of main types of types of product in the total value of imports or exports (in dollars). For both exports and imports, the shortfall from 100% is due to other items.

Table I.5

Brazil - 1980-82: Manufacturing industry - indices of production and employment, by industrial group

Industrial Groups	Production(*)			Employment(**)		
	1980	1981	1982	1980	1981	1982
Non-metallic minerals	144	135	131	109	101	93
Metallurgy	162	138	137	115	105	93
Mechanical goods	142	119	101	110	102	83
Electrical and communication equipment	150	126	121	119	104	94
Transport equipment	127	92	100	116	100	91
Paper and cardboard	168	154	161	123	113	107
Rubber	134	119	116	100	87	78
Chemical goods	154	140	145	107	103	96
Pharmaceuticals	137	145	141	96	95	92
Perfumery, soap and candles	175	177	173	112	108	111
Plastic products	152	116	130	115	100	96
Textiles	126	117	122	102	90	85
Clothing, footwear and woven goods	125	124	131	112	109	111
Foodstuffs	134	134	138	106	105	104
Beverages	145	135	129	117	110	102
Tobacco	126	128	126	100	93	82
Total	143	129	129	110	101	95

Source: F. IBGE - Indicadores Conjunturais da Indústria

* Base: mid-1975 = 100

** Base: mid-1976 = 100 (personnel engaged in production)

Table I.6

Brazil - 1980-82: Participation of private, multinational and state enterprises (in %)

Type of Ownership: Shareholder Control	Number of Enterprises			Net Assets			Net Operating Proceeds			Net Profits for financial period			Employees		
	1980	1981	1982	1980	1981	1982	1980	1981	1982	1980	1981	1982	1980	1981	1982
Domestic private	87.1	87.7	88.3	40.8	40.2	41.2	54.0	52.1	53.5	63.1	45.3	56.3	67.3	67.5	67.0
Foreign	7.7	7.0	6.7	11.0	10.4	10.1	23.2	22.3	21.8	16.4	12.4	16.1	15.6	14.1	13.3
State	5.2	5.3	5.0	48.2	49.4	48.7	22.8	25.5	24.7	20.5	42.3	27.6	17.1	18.4	19.3

Source: Visão, Quem é Quem 31.10.83

Table I.7

Small and medium-scale enterprises in different market structures *

Market structures and their characteristics	Typical industries or products	Types of interrelationship or functions of small-scale enterprises	Survival or expansion prospects of small-scale enterprises
Pure or concentrated oligopoly:			
Heavy technical and economic concentration of production; reasonably homogeneous products; marked discontinuities of scale and of production techniques, making it possible for firms of very different sizes to co-exist; strong technological and capital) barriers to the entry of new firms into the market; leadership by foreign companies.	In general, industrial inputs: iron and steel (pig iron, iron and steel ingots and laminated steel); cement; paper, fuels and lubricants; resins and artificial and synthetic fibres; chemical elements and organic and inorganic compounds, electric conductors.	Opposition to large companies, given the existence of technological discontinuities.	Confined to markets which, by virtue of their location and scale, do not interfere with the expansionary interests of the large companies.
Pure/Heterogeneous or Mixed Oligopoly:			
Basically the same scenario as for pure oligopoly, but with product differentiation.	In general, consumer durables: automobiles; tyres; television sets; radios and record-players; household electrical machines and appliances.	Dependence on and subordination to large firms in a context of industrial complementarity.	Depending on their degree of integration with the large firms.
Heterogeneous Oligopoly:			
Product differentiation, no definite dividing line between this and other market structures, even non-oligopolistic.	In general, non-durable consumer goods: cigarettes, pharmaceutical products, perfumery articles; latex goods.	Predominance of industrial complementarity function.	Predominantly dependent on their degree of complementarity to large firms.
Competitive Oligopoly:			
Little dynamic impetus; dependent on the growth of the economy in general and of urban incomes in particular; dominated by Brazilian companies.	In general, traditional non-durable consumer goods: animal offal, tinned meats; wheatmeal; purified vegetable oils; preparation of pasteurised and dehydrated milk; sugar milling and and refining; animal feed; beer; cotton spinning and weaving; weaving of continuous and artificial filaments of artificial and synthetic fibres; newspaper publishing and printing; raw vegetable oils; manures and fertilisers; dyes and laminated plastics.	Marginal production.	Limited by the rate of expansion of the market and the pace of expansion of large-scale enterprises.
Non-Oligopolistic/Atomistic Competition			
Low concentration of production; minority presence of large-scale enterprises among the leading companies; two patterns of production: homogeneous products(a) and differentiated products(b).	a. Intermediate consumer goods: processing of coffee, cereals and related products; factory and raw sugar manufacturing; baking and confectionary products, processing of plant textile fibres; sawmills. b. Non-durable consumer goods: mainly wooden furniture for residential use; footwear (except sports shoes); ready-made garments and knitwear.	a. Catering for atomised markets. b. Production of deluxe handicraft consumer goods.	a. Limited by the very nature of the market. b. Limited by fluctuating income levels.

Source: TAVARES, M.C. e outros. Estrutura industrial e empresas líderes. Rio de Janeiro, FINEP, 1978 mimeo: POSSAS, M., 1977, Estrutura industrial brasileira: base produtiva e liderança dos mercados, Master's Thesis UNICAMP, Campinas, 1970.

Table 1.8

São Paulo manufacturing industry - distribution of establishments, number of persons employed and gross output by industrial group, and participation of small-scale enterprises in each industry (in %)

Industrial Group	Distribution by Industry						Participation of small establishments (5-99 employees)					
	EST		EP		IGO		ESP		EP		IGO	
	1970	1980	1970	1980	1970	1980	1970	1980	1970	1980	1970	1980
10	9.3	10.1	7.0	5.9	3.6	3.1	93.3	95.4	45.3	50.7	29.4	34.1
11	9.8	11.2	11.7	13.4	11.0	13.4	86.1	86.4	35.9	37.0	25.2	22.4
12	7.0	10.3	8.6	14.2	7.1	10.4	85.3	83.6	38.4	37.5	30.5	26.2
13	3.8	4.0	6.8	7.4	6.6	6.6	78.5	78.6	27.7	25.4	22.3	18.8
14	3.5	2.8	9.4	7.5	12.4	10.8	82.1	79.8	16.7	17.2	8.2	6.6
15	2.8	2.5	1.2	1.3	0.7	0.7	92.3	96.0	74.0	68.9	60.1	44.2
16	5.9	4.7	3.2	2.9	1.6	1.4	94.2	94.4	69.5	65.9	60.1	46.1
17	1.9	1.7	3.1	2.6	2.9	2.9	78.4	80.9	30.8	33.1	23.4	22.9
18	1.1	1.0	1.9	1.7	2.5	2.2	84.4	82.1	24.8	16.6	11.3	10.3
19	0.8	0.6	0.5	0.5	0.3	0.2	90.8	91.9	18.5	55.3	12.2	52.5
20	3.0	3.0	4.6	3.7	9.8	17.6	76.8	84.9	29.4	40.7	32.8	31.6
21	0.6	0.5	1.5	0.8	2.5	1.3	66.3	70.6	19.7	25.2	15.7	25.0
22	0.6	0.5	0.7	0.6	1.6	1.0	78.4	89.3	29.5	37.1	17.7	25.8
23	2.4	3.2	2.4	3.3	2.0	2.3	84.9	87.4	46.5	47.5	36.8	41.1
24	8.9	6.4	14.8	8.8	10.3	6.5	80.2	84.0	27.2	30.6	35.3	28.7
25	9.2	10.5	6.0	8.4	3.5	3.2	80.5	93.0	52.7	48.7	50.0	42.8
26	18.3	15.8	8.5	7.7	15.2	10.5	57.1	95.3	41.7	52.9	35.2	36.8
27	2.0	0.9	1.5	0.7	1.4	0.6	87.3	90.9	46.2	48.2	33.7	35.5
28	0.0	-	0.2	0.1	0.3	0.1	33.3	25.0	-	-	-	-
29	5.0	4.9	3.2	2.8	2.4	1.5	91.3	95.9	53.6	58.2	42.0	51.5
30	3.8	3.2	3.1	2.8	1.9	1.8	86.8	91.6	49.2	49.2	46.1	37.4
Total	100.0 (28 634)	100.0 (45 752)	100.0 (1 243 364)	100.0 (2 231 219)	100.0 (64 752)	100.0 (5 024 548)	80.3	89.6	36.7	39.7	28.8	28.1

Source: (unadjusted data): F. IBGE - 1970 Industrial Census and preliminary results of the 1980 Industrial Census.
EST = establishments; EP = persons employed; IGO = output (in millions of cruzeiros, nominal value)

* Not including establishments with fewer than 5 employees (in 1970 and 1980) and/or value of production less than 640 times the largest minimum wage (in 1970).

Table 1.9

Municipal district of the capital city 1975-82: Manufacturing industry - distribution of establishments and employees by industrial group, and participation of small-scale enterprises in each industry (in %)

Industrial Group	Distribution by industrial group				Participation of small establishments (5-99 employees)			
	EST		EP		EST		EP	
	1975	1980	1975	1980	1975	1980	1975	1980
10	3.7	3.6	3.3	2.7	42.3	54.0	25.0	28.5
11	14.3	14.0	15.8	15.3	54.4	59.3	33.5	30.9
12	8.2	8.3	9.2	8.9	52.1	61.5	31.3	33.7
13	4.8	3.3	10.9	11.0	50.1	58.9	16.4	17.5
14	2.8	2.5	7.1	6.9	59.0	61.2	17.8	15.0
15	3.5	2.8	1.1	0.9	43.1	51.4	58.7	64.4
16	5.9	5.1	2.6	2.2	40.3	50.0	46.3	54.4
17	2.3	2.0	3.0	3.0	61.6	67.1	32.1	28.2
18	1.2	1.1	2.0	1.7	55.2	59.0	23.8	24.6
19	1.1	1.0	1.0	1.0	48.2	65.0	46.5	40.7
20	2.8	2.6	2.3	4.0	48.0	55.4	36.7	21.2
21	1.0	0.7	2.8	2.0	53.9	52.1	13.2	9.9
22	1.0	0.7	1.0	1.0	39.7	54.9	19.6	21.0
23	5.5	3.6	4.6	5.4	55.1	64.2	41.0	35.1
24	6.7	6.0	10.6	9.7	56.9	59.2	26.0	22.5
25	18.2	20.6	8.0	8.6	43.9	52.9	51.3	43.2
26	3.5	3.6	4.9	5.1	54.1	56.3	22.8	20.7
27	0.5	0.5	1.0	1.0	48.3	66.6	10.0	12.4
28	-	-	0.5	0.5	22.2	20.0	3.8	1.1
29	6.5	7.0	4.7	4.8	52.4	57.7	38.3	36.6
30	6.5	7.0	3.6	4.3	42.6	54.8	41.6	41.8
Total	100.0 (23 008)	100.0 (24 853)	100.0 (855 315)	100.0 (1 046 570)	49.6	57.0	30.5	30.2

Source: (unadjusted data): Ministry of Labor/RAIS

EST = establishments; EP = employees.

Table 1.10

Municipal district of the capital city: Manufacturing industry - occupational structure of the whole and small establishments, by industrial group (in %)

Groups	Small establishments Administrative	Unskilled	Semi-skilled	Skilled	Technician/ Engineer	Total (100%)	Total Administrative	Unskilled	Semi-skilled	Skilled	Technician/ Engineer	Total (100%)
10	25.6	19.4	44.1	9.9	1.0	8 476	19.1	22.0	40.8	16.4	1.7	32 725
11	19.9	12.7	46.6	19.6	1.2	52 252	19.5	13.0	49.5	15.6	2.4	144 180
12	25.9	8.0	21.9	39.5	4.7	22 552	24.5	7.6	29.0	32.3	6.6	77 977
13	22.9	9.4	46.8	15.9	5.0	19 836	18.6	7.4	54.4	12.5	7.1	108 719
14	19.2	11.6	45.0	23.0	1.2	13 549	18.5	10.0	50.2	17.3	4.0	68 353
15	21.6	15.8	47.4	15.0	0.2	4 766	22.8	17.3	47.8	11.8	0.3	6 912
16	16.3	7.9	39.3	35.8	0.7	14 983	18.0	9.8	43.5	27.5	1.2	24 299
17	21.0	11.2	58.6	8.9	0.3	7 584	19.6	15.5	52.3	10.8	1.8	24 777
18	21.1	11.6	59.7	6.6	1.0	4 027	18.0	7.6	64.4	7.8	2.2	16 215
19	21.6	10.5	54.5	13.1	0.3	1 841	16.9	9.6	60.9	12.2	0.4	3 049
20	44.8	12.8	33.3	2.5	6.6	6 602	42.9	14.9	30.6	5.9	5.7	23 301
21	47.1	8.7	36.9	1.3	6.0	3 217	48.1	5.6	37.6	2.9	5.8	22 074
22	32.1	6.9	56.2	1.5	3.3	2 319	39.9	8.1	46.4	3.1	2.5	12 315
23	18.1	10.6	64.4	6.0	0.9	16 477	17.7	11.0	62.3	7.6	1.4	47 457
24	17.7	7.7	67.2	6.4	1.0	18 473	15.3	8.0	68.0	7.5	1.2	81 545
25	17.6	3.7	52.8	25.7	0.2	48 271	16.2	4.2	55.5	24.0	0.1	83 088
26	40.5	7.2	31.1	20.8	0.4	16 789	32.5	16.6	38.5	11.4	1.0	50 993
27	50.3	20.2	28.2	0.6	0.7	751	28.9	30.1	30.8	7.2	3.0	7 972
28	59.7	1.6	37.1	1.6	-	124	17.7	5.4	60.5	14.5	1.9	2 772
29	25.8	4.5	33.9	34.7	1.1	17 572	24.8	11.0	36.8	24.1	3.3	44 100
30	22.3	7.8	52.4	15.0	2.5	10 507	18.6	9.5	57.4	11.9	2.6	27 514
Total	22.7	9.0	46.2	20.5	1.6	290 935	21.5	10.5	49.2	15.7	3.1	909 657

Source: SENAI-SP - DPEA.

Table I.11

SENAI-SP - 1982: Enrolment in and output of training courses for technicians and assistant technicians

Occupations/specialisation	Course	Enrolment	Output(*)
Designer (mechanical)	CQP-III	327	249
Designer (architectural)	CQP-III	107	63
Technician (instrumental)	CQP-IV	191	40
Technician (iron and steel)	CQP-IV	146	25
Technician (cellulose and paper)	CQP-IV	39	12
Technician (textiles)	HP	331	72 (55)
Technician (textiles)	CQP-IV	69	24
Technician (ceramics)	HP	256	51 (39)
Technician (ceramics)	CQP-IV	127	32
Technician (graphic arts)	HP	386	73 (58)
Technician (graphic arts)	CQP-IV	57	10
Technician (mechanics)	HP	582	120 (80)
Technician (mechanics)	CQP-IV	418	79
Technician (metallurgy)	HP	393	77 (73)
Technician (metallurgy)	CQP-IV	195	37
Technician (plastics)	HP	273	61 (51)
Technician (plastics)	CQP-IV	90	12
Technician (precision mechanics)	HP	575	109 (57)
	Total CQP-III	435	312
	Total CQP-IV	1 423	271
	Total HP	2 796	976 (413)
Total		4 653	1 559

Source: SENAI-SP, 1983 Op cit.

* The figures in brackets indicate, in the case of HP, the number of "technician certificates" awarded to students who completed the practical training programme after the third grade of the course; the remainder are those who completed the third grade with a "certificate of completion of second grade" but were not yet qualified for employment in the occupation learned.

Note: CQP-IV = Special technical course; HP = Technical education (secondary level)

Table I.12

CEAF-SP, 1983: Management support programmes for small and medium-scale enterprises

Programmes	Content/Objectives
Data management	Mobilisation of small and medium-scale enterprises in towns in the interior of the country with a view to investigating problems and promoting awareness of alternative solutions
Purchasing centres	Joint action by companies in the same branch with a view to purchasing industrial inputs
Export consortiums	Joint action by companies in the same branch with a view to taking advantage of export opportunities
Consortiums to promote foreign trade	Joint action by companies to find new outlets on the foreign market
National business exchange	Information on the supply of and demand for products and services, with a view to stimulating industrial subcontracting
Nationalisation	Information on items imported, mainly by large public companies, with a view to encouraging small and medium-scale enterprises to produce them
Technology	Guidance for small and medium-scale entrepreneurs on universities and research institutes that can offer them technological assistance in specific subjects
Energy substitution and conservation	Critical analyses and recommendations with a view to more efficient exploitation and/or substitution of energy sources by small and medium-scale enterprises

Table 1.13

SENAI-SP - 1982: Description of assistance to small and medium-scale industry

	Breakdown	Programmes (%)	Hours (%)
Activities carried out	Technological assistance (fields)		
	- Manufacturing methods	35.0	41.0
	- Rationalisation of production	33.0	39.0
	- Work preparation	9.0	8.0
	- Human resources	5.0	6.0
	- Others	9.0	5.0
	Other activities (study grants, publications, seminars)	9.0	1.0
	Total (100%)	151	9 977
Size of enterprises assisted	Small (up to 99 employees)	71.0	73.0
	Medium (100-499 employees)	29.0	27.0
	Total (100%)	151	9 977
Industry of enterprises assisted	Clothing, footwear and woven goods	68.0	74.0
	Mechanical goods	7.0	3.0
	Electrical and communication equipment	5.0	6.0
	Metallurgy	5.0	1.0
	Non-metallic minerals	3.0	6.0
	Publishing and graphics	5.0	2.0
	Others	7.0	8.0
	Total (100%)	151	9 977

Source: SENAI-SP, CE/DAE

Table I.14

SENAI-SP - 1976: Impressions of its performance
summary of results

Aspects evaluated	Opinion	Enterprises		Total
		Small and medium (50-499)	Large (500 or more)	
Sample	Capital city	230	47	277
	Interior	210	49	259
	Total	440	96	536
SENAI graduates	Frequently recruited	20.4	74.0	30.0
	Rarely recruited	44.2	22.9	40.3
	Never recruited	35.0	3.1	29.3
	Are preferred by the enterprise	47.7	82.3	53.9
	Are adequate	46.6	66.6	50.2
	Are best	52.7	88.5	59.1
SENAI apprenticeship courses	Adequate	50.5	71.9	54.3
	Inadequate	23.4	21.9	23.1
	Not known	13.4	2.1	11.4
	No opinion/reply	12.7	3.1	11.2
SENAI training courses	Adequate	44.8	73.0	49.8
	Inadequate	25.0	15.6	23.3
	Not known	14.8	3.1	12.7
	No opinion/reply	15.4	8.3	14.2
SENAI machinery and equipment (schools)	Adequate	37.5	62.5	42.0
	Inadequate	1.6	3.1	1.9
	No opinion/reply	60.9	34.4	56.1
Visits by SENAI	Useful and productive	48.0	82.3	54.1
	Of little use	7.0	4.2	6.5
	Never visited/no reply	45.0	13.5	39.4
Objectives of SENAI	Fully attained	43.0	64.6	46.8
	Partly attained	29.5	29.2	29.5
	Not attained	3.2	-	2.6
	No opinion/reply	24.3	6.2	21.1
Closing down of SENAI	Major impact on enterprise	23.4	61.5	30.0
	Little impact on enterprise	26.6	25.0	26.3
	No impact/no reply	50.0	13.5	43.7

Source: SENAI-SP, 1977, Impressoes Sobre O Seu Desempenao Op cit.

N.B. The basis for the percentages indicated is in all cases the total number of enterprises in each group: 440 small/medium and 96 large.

Table I.15

SENAI-SP and Law 6.297/75 - summary of results

Variables	Result		Enterprises			
			Small (50-99)	Medium (100-499)	Large (500 or more)	Total
Sample	Composition	percentage	9.2	35.1	55.7	100.0
		number	84	322	510	916
Training of manpower	Generally trains employees		29.1	62.7	86.7	73.0
	Has a training section		1.2	17.4	55.7	37.2
	Does not usually provide training facilities because:					
	- Training occurs on the job		31.5	34.5	34.4	33.7
	- Does not employ skilled manpower		28.1	23.0	15.6	22.3
	- Lacks facilities, time, space		8.8	14.2	18.7	14.1
	- Recruits staff with experience		17.5	9.7	9.4	11.5
	- Other reasons		14.1	18.6	21.6	18.4
	Total (100%)		57	113	64	234
Law 6.297/75	Knows of it		51.2	83.5	86.3	81.0
	Has taken advantage of it with SENAI advice		9.5	20.2	35.1	27.5
	Has taken advantage of it without SENAI advice		10.7	18.9	27.5	21.8
	Knows of it but does not take advantage of it because:					
	- Has no training sector		23.1	18.1	25.8	22.8
	- Staff does not need training		42.4	27.6	12.9	21.1
	- Not familiar with procedures		11.5	21.9	12.3	15.8
	- Other reasons		33.0	32.4	49.0	40.3
	Total (100%)		26	105	155	286
SENAI consultancy on Law 6.297/75	Knows of it		27.3	29.2	86.9	61.1
	Has used it		9.5	20.2	35.1	27.5
Junior apprentices at SENAI	Has provided support in the past two years		30.9	49.4	80.4	65.0
	Has deducted costs, in accordance with Law 6.297/75		15.5	27.3	62.0	45.5
SENAI industrial training*	Knows of it		58.3	72.7	86.4	79.0
	Has used it		14.3	28.3	61.6	45.5
SENAI mobile units*	Knows of them		32.1	35.0	58.6	47.9
	Has used them		3.4	2.8	11.7	7.8

Source: SENAI-SP, 1980, O SENAI e a Lei 6297/75, Op. Cit.

N.B. Except in the case of items for which the bases of the percentages are indicated, the aggregate of reference is always the total number of enterprises in each category: 84 small-scale, 322 medium-scale and 510 large-scale enterprises.

* See Annex B.

Table I.16

SENAI-SP - 1976: Lathe operators: employment situation and evaluation of performance of SENAI apprentices by size of enterprise (in %)

	Breakdown	Size of enterprise (number of employees) Up to 10	10-49	50-499	500-599	1000 or more	Total
Employment situation	Works in the firm which supported him/her during the course	0.3 (2)	5.0 (31)	41.5 (258)	53.2 (330)		100.0 (621)
	Works in company where first employed after course	5.5 (47)	13.1 (112)	41.1 (351)	40.3 (345)		100.0 (855)
	Works in the same company as when company research took place (only graduates actually employed as lathe operators)	25.0 (93)		44.5 (165)	30.5 (113)		100.0 (371)
	Average hourly wage (only graduates actually employed as mechanics)*	8.12	11.41	12.97	13.16	13.47	12.0
Evaluation of performance	Average proportion of graduates performing operations for which they have been trained**	87.6		76.5	86.5	79.4	80.8
	Averages obtained in work-related aspects***	84.9	75.5	75.2	81.0	75.0	

Source: SENAI-SP, Os Torneiros Mecânicos formados pelo SENAI-SP: uma apreciação, 1980, Op. cit. Avaliacão do desempenho dos torneiros mecânicos formados pelo SENAI, by M. DO ASSIS 1977, Op. cit.

* In 1976 cruzeiros, when the minimum hourly wage was 3.14 cruzeiros in the State of São Paulo

** Average proportion of graduates performing, regularly or occasionally, the SMO (Occupational Methodocial Series) operations of their respective courses

*** Including work techniques, productivity, human relations, reliability on the job, initiative/self assurance

Table I.17

SENAI-SP - 1976: Study on lathe operators (LO): description of employing enterprises, by size (in %)

Breakdown		Up to 10	Size of enterprise (number of employees) 10-99	100-499	500 or more	Total
Distribution	Enterprises (n = 316)	2.2	43.1	29.1	25.6	100.0
	Lathe operators* (n = 2352)	0.3	17.4	29.9	52.3	100.0
Activities in which LOs are employed	Production	41.2	57.6	61.7	48.3	53.9
	Maintenance	-	3.2	6.9	17.8	11.9
	Toolwork	11.8	4.9	12.1	23.8	17.0
	Miscellaneous ("versatility")	47.0	34.3	19.3	10.1	17.2
	Total (100%)	17	964	1 657	2 894	5 532
Occupational grade of LOs	Assistant	5.7	9.2	6.0	6.5	6.8
	Junior officer	29.6	22.6	14.4	17.2	17.3
	Officer	47.1	55.9	67.5	67.1	65.2
	Foreman	-	3.7	5.6	4.7	4.8
	Master	17.6	8.6	6.5	4.5	5.9
	Total (100%)	17	964	1 657	2 894	5 532
Attendance at SENAI courses by LOs**	Yes	37.5	43.9	44.6	52.1	48.0
	No	62.5	56.1	55.4	47.9	52.0
	Total (100%)	17	857	1 485	2 024	4 383

Source: SENAI-SP, 1980, Op. cit

* Including the 393 graduates in the research sample actually employed in the occupation learned.

** Question not applying to assistant LOs.

Table I.18

SENAI-SP - 1982: Study on CAI general mechanics and fitters: summary of results by size of enterprise (in %)

Breakdown		Size of enterprise (number of employees) 0-4	5-99	100-499	500 or more	Total
Current employment	Machine fitter (n = 251)	5.2	24.7	15.9	54.2	100.0
	General mechanic (n - 362)	6.0	20.2	18.0	55.8	100.0
	Total (n = 613)	5.7	22.0	17.1	55.1	100.0
Monthly wage*	Up to 1 MW	25.9	2.3	-	-	1.7
	1-3	51.9	85.7	85.5	57.6	68.4
	3-5	14.8	9.0	11.6	39.2	26.6
	5 or more	7.4	3.0	2.9	3.2	3.3
	Total (100%)	27	133	104	337	601
Duties**	Proportion of graduates performing operations for which they have been trained					
	- Fitter	86.0	68.4	70.6	67.4	68.3
	- General mechanic	52.8	55.5	47.9	44.7	47.3

Source: SENAI-SP: Estudo com ex alunos do CAI. Relatorio I CAI by Márcia do Lima 1982.

* MW = minimum wage = 11,968 cruzeiros in January 1982 in the State of São Paulo.

** Only applies to graduates employed in the occupation learned or in related occupations (139 fitters and 233 general mechanics).

Table I.19

SENAI-SP - 1982: Study on CQP-I lathe operators and fitters: summary of results by size of enterprise (in %)

Breakdown		Size of enterprise (number of employees)				
		0-4	5-99	100-499	500 or more	Total
Current employment	Machine fitter	5.7	23.5	19.8	51.0	298
	Lathe operator	8.3	24.6	25.9	41.2	228
	Total	6.8	24.0	22.4	46.8	526
Monthly wage *	1-3 MW	64.7	66.4	50.8	33.7	47.3
	3-5 MW	26.5	21.3	39.0	52.5	40.3
	5 or more MW	8.8	12.3	10.2	13.8	12.4
	Total (100%)	34	122	118	246	520
Duties **	Proportion of graduates performing operations for which they have been trained					
	- Fitter	86.9	73.2	76.4	62.6	68.9
	- Lathe operator	76.7	70.7	65.5	60.4	64.9

Source: SENAI-SP: Estudo con ex alunos do CQPE Relatorio II by Elenice M. Leite 1982.

* MW = minimum wage = 11 968 cruzeiros in January 1982

** Only applies to graduates employed in the occupation learned or in related occupations (123 fitters and 100 lathe operators).

Table I.20

SENAI-SP - 1978: Study on graduates of technical courses: summary of results by size of enterprise (in %)

Breakdown		Size of enterprise (number of employees) 0-4	5-99	100-499	500 or more	Total
Current employment	HP graduates - men	4.6	21.0	21.0	53.4	100.0 (n=926)
	HP graduates - women	3.1	33.1	25.2	38.6	100.0 (n=163)
	Total - HP	4.4	22.8	21.2	51.6	100.0 (n=1089)
	CQP-IV graduates - men	1.6	5.1	14.4	78.9	100.0 (n=432)
Monthly wage *	HP graduates - men	12 800	11 800	11 400	12 000	11 900
	HP graduates - women	3 900	6 300	6 900	7 600	6 900
	Total - HP	12 300	10 600	10 600	11 500	11 100
	CQP-IV graduates - men	14 500	12 700	14 600	16 100	15 700

* In 1978-cruzeiros, when the minimum wage in the State of São Paulo was 1 560 cruzeiros (with effect from 19 May 1978).

HP = Secondary school graduates; CQP-IV = Graduates of special technical course.

Source: Os tecnicos formados pelo SENAI : Uma apreçiação sobre sua inserção no mercado de trabalho - SENAI-SP, 1980.

ANNEX A

PART II

342

Table II.1

Brazil - 1975: Composition of clothing/footwear, metal products and machinery and electric and communications equipment industries (in %)

Industries/sectors	Number of establishments	Personnel employed	Gross output Total
Clothing, footwear and woven articles			
- Ready-made and protective clothing	$\boxed{46.1}$	$\boxed{52.0}$	$\boxed{54.5}$
- Manufacture of footwear	$\boxed{37.2}$	$\boxed{34.3}$	$\boxed{24.4}$
- Woven articles (bedclothes, tablecloths and bath towels, curtains and linings)	6.1	5.4	12.9
- Clothing accessories (handkerchiefs, ties, umbrellas, belts, gloves)	5.9	4.2	3.9
- Ready-made clothes for industrial security	2.8	3.1	3.4
- Hat manufacture	1.5	0.8	0.7
- Dies, prints and other finishes	0.4	0.2	0.2
Total (100%)	11 166	302 192	27 002 688 (*)
Metal products and machinery			
- Machine tools, operating machines and industrial equipment, including spare-parts and accessories	$\boxed{27.6}$	$\boxed{24.7}$	$\boxed{24.8}$
- Agricultural machines and appliances	9.2	7.6	9.1
- Non-electric machines, ... boilers and industrial transmission equipment	5.8	7.7	10.3
- Industrial machines, equipment and appliances for hydraulic aerotechnical, thermal ventilation and refrigeration installations	8.7	7.6	8.5
- Production of machines and equipment of various sorts (for office, or domestic use, for example)	6.8	10.4	16.0
- Repair or maintenance	$\boxed{34.2}$	$\boxed{34.3}$	$\boxed{14.9}$
- Other	7.7	7.7	16.4
Total (100%)	8 171	391 472	62 190 553 (*)
Electrical and communications material			
- Electric equipment and lightbulbs except for automobiles	$\boxed{29.8}$	$\boxed{28.3}$	$\boxed{32.1}$
- Electric equipment for automobiles	8.6	9.3	8.5
- Machines, appliances, equipment and installations for production and distribution of electric energy	12.3	13.9	11.7
- Electric appliances	9.3	8.4	7.8
- Electronic machines, appliances, equipment and material	5.2	6.8	6.0
- Communications appliances and equipment	$\boxed{16.0}$	$\boxed{25.3}$	$\boxed{30.7}$
- Repair and maintenance	18.8	8.0	3.2
Total (100%)	2 795	176 453	39 241 182 (*)

Source: F. IBGE - Industrial Census 1975

* In one thousand Cruzeiros.

Table II.2

The State Capital Municipality 1981: Characteristics of the sectors chosen for this study

Sector (*)		Absolute Values		The part played by small businesses in the whole of the sector (a/b)	The part played by each sector in the industry (**)	
		(a) Small businesses	(b) Total	%	Small businesses %	Total %
Clothing	EST	1 465	1 597	91.7	77.7	78.2
	EMP	34 473	73 154	47.1	79.2	83.8
	IGO	9 696	16 841	57.6	85.5	88.8
Electronics	EST	187	282	66.3	29.0	33.0
	EMP	6 401	48 848	13.1	35.2	46.4
	IGO	491	3 529	13.9	19.1	31.7
Mechanical Goods	EST	349	380	91.8	35.5	32.6
	EMP	8 726	18 289	47.7	31.3	21.6
	IGO	3 407	5 628	60.5	32.6	19.6

Source: SENAI-SP

* Clothing: manufacture of cold and warm weather wear (code 25.10/CGC); Electronics: production of electric and communications equipment (codes 13/70 and 13.80); Mechanical Goods: production of spare parts, accessories, utensils and tools for industrial machines (code 12.32).

** Columns (a) and (b) of this table/columns (a) and (b) of Table 2.4, respectively.

EST = Establishment; EMP = Employees; IGO = Gross output.

Table II.3

State capital Municipality - 1981
Distribution according to chosen zones

Sector	Zones	Small businesses (5-99 employees)			Total (establishments with 5 or more employees)		
		EST	EMP	SP	EST	EMP	SP
Clothing	Centre	62.9	56.0	66.3	61.1	50.9	60.1
	South	9.8	11.8	9.7	9.8	8.9	8.2
	Subtotal	72.7	67.8	76.0	70.9	59.8	68.3
	Total(*) (100%)	1 465	34 473	9 696	1 597	73 154	16 841
Electronics	Centre	18.2	20.1	20.2	13.8	4.5	4.6
	South	48.7	39.0	44.6	50.3	46.0	46.7
	Subtotal	66.9	59.1	64.8	64.1	50.5	51.3
	Total(*) (100%)	187	6 401	491	282	48 848	3 529
Mechanical Goods	East	32.3	31.6	30.0	31.0	18.8	20.0
	South	31.8	34.2	34.0	32.1	47.6	44.5
	Subtotal	64.1	65.8	64.0	63.1	66.4	64.5
	Total(*) (100%)	349	8 726	3 407	380	18 289	5 628

* Including all zones in the State Capital.

EST = establishment; EMP = employees; SP = skilled personnel.

Table II.4

SENAI-SP - 1982: Enrolment and output of courses in the area of mechanics, electro-electronics and clothing

Areas	Occupations taught (*)	Enrolled (%)			Graduated (Output) (%)		
		Courses	Trainee programme	Total	Courses	Trainee programme	Total
Mechanics	56	68.0	16.8	31.2	68.5	15.9	26.4
Electro-electronics	16	11.6	3.0	5.4	11.7	2.9	4.7
Clothing	11	3.2	3.5	3.4	3.8	3.4	3.5
Subtotal		82.8	23.3	40.0	84.0	22.2	34.6
Total (100%)	-	55 677	140 376	196 053	33 142	133 785	166 927

Source: SENAI-SP, Educational Statistics, 1982

(*) Only occupations offered in course form.

Table II.5

Company: Year in which it was founded and legal status (in %)

Detailed list		Sector			
		Total	Clothing	Electronics	Mechanical Goods
Year in which it was founded	1915-1939	3.0	2.5	3.4	3.3
	1940-1949	6.0	-	10.0	10.0
	1950-1959	8.0	5.0	10.0	10.0
	1960-1969	31.0	25.0	33.3	36.7
	1970-1974	32.0	35.0	33.3	26.7
	1975-1979	20.0	32.5	10.0	13.3
	Total (100%)	100	40	30	30
Age (in years)	Up to 5	7.0	7.5	6.7	6.7
	6-10	33.0	47.5	23.3	23.3
	11-15	24.0	17.5	29.9	26.6
	16-20	14.0	17.5	6.7	16.7
	21-30	11.0	2.5	20.0	13.3
	31-40	6.0	5.0	6.7	6.7
	41-68	5.0	2.5	6.7	6.7
	Total (100%)	100	40	30	30
	Age average (in years)	16	14	18	18
Legal status (type of company)	Limited liability	92.0	92.5	93.3	90.0
	Individual	5.0	7.5	-	6.7
	Public limited	3.0	-	6.7	3.3
	Total (100%)	100	40	30	30
Changes in legal status	None	86.0	90.0	86.7	80.0
	Occurred	14.0	10.0	13.3	20.0
	Total (100%)	100	40	30	30

Table II.6

Company: Location (in %)

Detailed list		Sector			
		Total	Clothing	Electronics	Mechanical Goods
Present location (zone)	Centre	35.0	$\boxed{62.5}$	33.3	-
	South	45.0	37.5	$\boxed{63.4}$	36.7
	East	19.0	-	-	$\boxed{63.3}$
	West	1.0	-	3.3	-
	Total (100%)	100	40	30	30
Changes in location	Did not occur	33.0	30.0	23.3	46.7
	Occurred	$\boxed{67.0}$	$\boxed{70.0}$	$\boxed{76.7}$	$\boxed{53.3}$
	- Once	41.0	42.5	46.7	33.3
	- Twice	16.0	20.0	16.7	10.0
	- 3-5 times	10.0	7.5	13.3	10.0
	Total (100%)	100	40	30	30
Reason for change in location	Planning/company decision, for expansion/improvement in operational conditions	$\boxed{89.6}$	$\boxed{89.3}$	$\boxed{95.6}$	$\boxed{81.3}$
	Necessity/imposition, external reason	7.4	7.1	-	18.7
	Both of the above	3.0	3.6	4.4	-
	Total (100%)	67	28	23	16
Initial location	Same zone, same disctrict	$\boxed{40.3}$	$\boxed{60.7}$	21.8	31.3
	Same zone, other district	37.3	25.0	$\boxed{43.5}$	$\boxed{50.0}$
	Other zone in the state capital	22.4	14.3	34.7	18.7
	Total (100%)	67	28	23	16

Table II.7

Company: Type of ownership and built up area (in %)

Detailed list			Sector			
			Total	Clothing	Electronics	Mechanical Goods
Type of ownership	Private		33.0	25.0	33.3	43.3
	Rented		67.0	75.0	66.7	56.7
	Total (100%)		100	40	30	30
Changes in the type of ownership	None		80.0	85.0	76.7	76.7
	Some		20.0	15.0	23.3	23.3
	Total (100%)		100	40	30	30
Built up area (m^2)	40-199		16.0	17.5	6.7	23.3
	200-399		23.0	30.0	26.6	10.0
	400-599		16.0	12.5	13.3	23.3
	600-999		25.0	25.0	23.4	26.6
	1000-4000		20.0	15.0	30.0	16.8
	Total (100%)		100	40	30	30
	Average area (m^2) according to size of firm	Overall	643	539	810	615
		Stratum 1	367	260	435	409
		Stratum 2	845	673	1 076	859
		Stratum 3	1 059	852	1 325	1 250
Changes in the initial area	None		41.0	50.0	33.3	36.7
	Increased		57.0	50.0	60.0	63.3
	Decreased		2.0	-	6.7	-
	Total (100%)		100	40	30	30

Table II.8

Company: Type of business and capital stock (in %)

Detailed list		Total	Sector		
			Clothing	Electronics	Mechanical Goods
Type of business	Only one	$\boxed{89.0}$	$\boxed{82.5}$	$\boxed{90.0}$	$\boxed{96.7}$
	Parent company	11.0	17.5	10.0	3.3
	- 1 branch	10.0	15.0	10.0	3.3
	- 2 branches	1.0	2.5	-	-
	Total (100%)	100	40	30	30
Changes in the type of business	None	$\boxed{81.0}$	$\boxed{70.0}$	$\boxed{80.0}$	$\boxed{96.7}$
	Some - was an only company, there are now subsidiaries	11.0	17.5	10.0	3.3
	Some - had subsidiaries, is now an only company	8.0	12.5	10.0	-
	Total (100%)	100	40	30	30
Registered capital (in millions of cruzeiros)	Less than 1	17.0	20.0	10.0	20.0
	1-2	19.0	20.0	16.7	20.0
	3-4	8.0	12.5	6.7	3.4
	5-9	12.0	15.0	20.0	-
	10-19	20.0	15.0	23.3	23.3
	20-49	13.0	5.0	13.3	23.3
	50 or more	11.0	12.5	10.0	10.0
	Total (100%)	100	40	30	30
Average capital stock(in 1000 CR$) by size	Overall	20 885	16 600	17 966	29 519
	Stratum1	8 176	2 287	6 230	14 923
	Stratum2	21 895	14 835	27 146	27 594
	Stratum3	64 785	53 600	31 500	170 500
Increase in capital	None	50.0	$\boxed{52.5}$	20.0	$\boxed{76.7}$
	Occurred one or twice	8.0	10.0	10.0	3.3
	Occurred 3 or more times	42.0	37.5	$\boxed{70.0}$	20.0
	Total (100%)	100	40	30	30

Table II.9

Company: Trends between 1981-1982 (in %)

Variables	Trends		Sector		
		Total	Clothing	Electronics	Mechanical Goods
Employed personnel	Stable	$\boxed{37.0}$	$\boxed{42.5}$	23.3	$\boxed{43.3}$
	Increasing	15.0	12.5	23.3	10.0
	Decreasing	$\boxed{40.0}$	$\boxed{30.0}$	$\boxed{50.0}$	$\boxed{43.3}$
	Unstable	8.0	15.0	3.4	3.4
Temporary manpower	Stable	7.0	15.0	-	3.3
	Increasing	7.0	15.0	3.3	-
	Decreasing	11.0	20.0	6.7	3.3
	Unstable	6.0	15.0	-	-
	Does not use	69.0	35.0	90.0	93.4
Production	Stable	26.0	25.0	23.3	30.0
	Increasing	19.0	22.5	26.7	6.7
	Decreasing	$\boxed{46.0}$	$\boxed{35.0}$	$\boxed{50.0}$	$\boxed{56.6}$
	Unstable	9.0	17.5	-	6.7
Turnover sales	Stable	25.0	25.0	23.3	26.7
	Increasing	19.0	22.5	26.7	6.7
	Decreasing	$\boxed{45.0}$	$\boxed{32.5}$	$\boxed{50.0}$	$\boxed{56.6}$
	Unstable	11.0	20.0	-	10.0
Use of installed capacity	Stable	$\boxed{37.0}$	$\boxed{40.0}$	$\boxed{43.3}$	26.7
	Increasing	18.0	20.0	20.0	13.3
	Decreasing	$\boxed{35.0}$	22.5	$\boxed{36.7}$	$\boxed{50.0}$
	Unstable	10.0	17.5	-	10.0
	Total (100%) (*)	100	40	30	30

(*) Percentages for each variable add up to 100%.

Table II.10

Companies perception: Perspectives for 1983-1984 (in %)

Variables	Perspectives	Total	Sector		
			Clothing	Electronics	Mechanical Goods
Personnel employed	Stable	$\boxed{47.0}$	$\boxed{50.0}$	$\boxed{40.0}$	$\boxed{50.0}$
	Increasing	17.0	15.0	26.7	10.0
	Decreasing	28.0	30.0	33.3	20.0
	Unstable	3.0	-	-	10.0
	Does not know	5.0	5.0	-	10.0
Temporary manpower	Stable	13.0	$\boxed{32.5}$	-	-
	Increasing	6.0	15.0	-	-
	Decreasing	9.0	12.5	10.0	3.3
	Unstable	3.0	5.0	-	3.3
	Does not know/ Does not use	69.0	35.0	90.0	93.4
Production	Stable	$\boxed{37.0}$	$\boxed{45.0}$	30.0	$\boxed{33.4}$
	Increasing	25.0	25.0	$\boxed{36.7}$	13.3
	Decreasing	26.0	25.0	33.3	20.0
	Unstable	7.0	-	-	23.3
	Does not know	5.0	5.0	-	10.0
Sales	Stable	$\boxed{36.0}$	$\boxed{42.5}$	26.7	$\boxed{36.7}$
	Increasing	24.0	20.0	$\boxed{40.0}$	13.3
	Decreasing	25.0	22.5	33.3	20.0
	Unstable	10.0	10.0	-	20.0
	Does not know	5.0	5.0	-	10.0
	Total (100%) (*)	100	40	30	30

(*) Percentages for each variable add up to 100%.

Table II.11

Company: Markets (in %)

Detailed list		Total	Sector		
			Clothing	Electronics	Mechanical Goods
Exports	Never exported	$\boxed{73.2}$	$\boxed{82.1}$	$\boxed{53.3}$	$\boxed{82.1}$
	Exported, but no longer does so	14.4	12.9	23.3	7.1
	Exports sometimes	9.3	2.5	16.7	10.8
	Exports regularly	3.1	2.5	6.7	-
	Total (100%)	97	39	30	28
Sales in the State of São Paulo	Total production	22.0	20.0	20.0	26.7
	Most of its production	$\boxed{44.0}$	$\boxed{35.0}$	$\boxed{33.3}$	$\boxed{66.7}$
	Half of its production	8.0	10.0	10.0	3.3
	Smallest part of production	$\boxed{26.0}$	$\boxed{35.0}$	$\boxed{36.7}$	3.3
	Total (100%)	100	40	30	30
Principal market outside of São Paulo	South	$\boxed{35.9}$	$\boxed{56.3}$	$\boxed{33.3}$	9.1
	Southeast	17.9	12.5	12.5	$\boxed{31.8}$
	North/Northeast	14.1	12.5	25.0	4.6
	Several/every region	$\boxed{32.1}$	18.7	$\boxed{29.2}$	$\boxed{54.5}$
	Total (100%)	78	32	24	22

Table II.12

Company: Production-planning and organisation (in %)

Detailed list			Sector		
		Total	Clothing	Electronics	Mechanical Goods
Production planning	According to customers' requests	$\boxed{50.0}$	$\boxed{42.5}$	$\boxed{40.0}$	$\boxed{70.0}$
	According to sales	14.0	20.0	16.7	3.3
	According to special requests and sales	$\boxed{30.0}$	$\boxed{32.5}$	$\boxed{30.0}$	26.7
	Other	6.0	5.0	13.3	26.7
	Total (100%)	100	40	30	30
Production organisation	Piecework or project	12.0	5.0	-	33.3
	Small batch	$\boxed{52.0}$	$\boxed{70.0}$	$\boxed{60.0}$	20.0
	Large batch	13.0	22.5	13.3	-
	Mixed	23.0	2.5	26.7	$\boxed{46.7}$
	Total (100%)	100	40	30	30
Production line/ assembly line	Non-existant	19.0	20.0	-	$\boxed{36.7}$
	Exist - flexible, temporary basis	29.0	30.0	26.7	30.0
	Exist - fixed, permanent basis	$\boxed{52.0}$	$\boxed{50.0}$	$\boxed{73.3}$	33.3
	Total (100%)	100	40	30	30

Table II.13

Company: Machinery (in %)

Detailed list		Total	Sector		
			Clothing	Electronics	Mechanical Goods
Origin (make)	Exclusively national	26.0	2.5	43.4	40.0
	Mostly national	26.0	7.5	33.3	43.4
	Exclusively foreign	17.0	40.0	-	3.3
	Mostly foreign	28.0	50.0	13.3	13.3
	Mixed	3.0	-	10.0	-
	Total (100%)	100	40	30	30
Changes in machinery	None	10.0	7.5	20.0	3.3
	Small amount	17.0	17.5	10.0	23.4
	Most of it	60.0	70.0	46.7	60.0
	Complete change	13.0	5.0	23.3	13.3
	Total (100%)	100	40	30	30
Type of change	Modernisation/ substitution	12.2	10.8	20.8	6.9
	Modernisation/ increase	41.1	37.9	45.8	41.4
	Substitution and increase	41.1	43.2	29.2	48.3
	Reduction/sale	5.6	8.1	4.2	3.4
	Total (100%)	90	37	24	29
Problems involving machinery	None	69.0	47.5	86.7	80.0
	Some - sometimes	24.0	42.5	10.0	13.3
	Some - always	7.0	10.0	3.3	6.7
	Total (100%)	100	40	30	30

Table II.14

Company: Raw materials (in %)

	Detailed list	Total	Sector		
			Clothing	Electronics	Mechanical Goods
Origin of raw material	Totally or mostly supplied by customers	8.0	7.5	-	16.7
	Totally or mostly purchased by the company	87.0	87.5	96.7	76.7
	Partly supplied/partly purchased	5.0	5.0	3.3	6.6
	Total (100%)	100	40	30	30
Main supplier	Medium and small-sized companies	61.0	70.3	56.7	53.6
	Large national companies	25.2	24.3	23.3	28.6
	Multinational or foreign companies	6.4	2.7	13.3	3.6
	Other (through an intermediate, or other, but mainly by large companies)	7.4	2.7	6.7	14.2
	Total (100%)	95	37	30	28
Type of payment	Cash payment for total or most of merchandise	8.4	13.5	3.3	7.1
	Payment on credit - totally	70.5	62.2	90.0	60.8
	Payment on credit - for most of merchandise	19.0	24.3	6.7	25.0
	Part cash/part credit	2.1	-	-	7.1
	Total (100%)	95	37	30	28
Problems with raw materials	None	52.0	52.5	46.7	56.7
	Some - sometimes	36.0	42.5	30.0	33.3
	Some - always	12.0	5.0	23.3	10.0
	Total (100%)	100	40	30	30
Most common types of problems	Quality and/or other specifications	30.6	52.6	25.0	38.4
	Price increases, costs	33.3	31.6	37.5	30.8
	Shortage, seasonal drop	16.7	5.3	25.0	23.1
	Delay in delivery	10.4	10.5	12.5	7.7
	Total (100%)	48	19	16	13

Table II.15

Company: Female labour directly involved in production (in %)

	Detailed list		Sector		
		Total	Clothing	Electronics	Mechanical Goods
Proportion of women among the total number of employees in each type of job	Manual	32.5	58.9	41.7	-
	Semi-skilled	60.2	74.8	62.4	5.0
	Head of section/supervisor of semi-skilled	52.6	58.8	50.0	-
	Skilled	54.5	97.7	-	2.8
	Foreman (of skilled workers)	26.4	66.7	-	-
	Technician	5.0	33.3	2.9	-
	Total	51.7	82.5	43.6	2.8
	n = employees	(959)	(693)	(254)	(12)
Proportion of companies that employ women among the total number of companies	Manual	35.2	83.3	25.0	-
	Semi-skilled	69.9	94.4	75.0	15.8
	Head of section/supervisor of semi-skilled	50.0	57.1	44.4	-
	Skilled	41.7	97.1	-	3.5
	Foreman	29.8	66.7	-	-
	Technician	11.7	28.5	11.1	-
	Total	63.0	100.0	70.0	10.0
	n = number of firms employing women	(63)	(40)	(21)	(3)

Table II.16

Company: Participation of partners in the registered capital and company activities (in %)

	Detailed list	Total	Sector		
			Clothing	Electronics	Mechanical Goods
Participation in registered capital	Equal	40.3	62.1	20.0	33.3
	Unequal - most of it belongs to a partner(s) who works in the company	49.0	32.4	66.7	51.8
	Unequal - most of it belongs to a partner who does not work in the firm	10.7	5.5	13.3	14.9
	Total (100%) (*)	94	37	30	27
Who does most of the decision-making	Partner(s) who works in the firm	81.9	78.4	90.0	77.8
	Partner-legal entity	1.1	-	-	3.7
	All associates, whether or not working in firm	17.0	21.6	10.0	18.5
	Total (100%) (*)	94	37	30	27
Participation of partners in company activities	None of the associates	1.1	2.7	-	-
	Only one	31.9	27.0	36.7	33.3
	Two or more, but not all	33.0	19.0	40.0	44.5
	All do	34.0	51.3	23.3	22.2
	Total (100%) (*)	94	37	30	27
Division of work among partners	None	11.1	19.2	-	11.1
	There is some	88.9	80.8	100.0	88.9
	Total (100%) (**)	63	26	19	18
Participation of partners in production	Never occurs	6.3	5.1	6.9	7.1
	Sometimes occurs	6.3	5.1	10.3	3.6
	Always occurs	87.4	89.8	82.8	89.3
	Total (100%)	96	39	29	28
Main activity of partners in production	Planning/supervising	60.0	70.2	55.6	50.0
	Planning/supervising and executing	40.0	29.8	44.4	50.0
	Total (100%)	90	37	27	26

(*) Does not include individual companies

(**) Only applies to companies where two or more partners participate in company activities.

Table II.17

Entrepreneurs: Personal data - sex, age, place of birth (in %)

	Detailed list	Total	Sector		
			Clothing	Electronics	Mechanical Goods
Sex	Men	88.0	77.5	96.7	93.3
	Women	12.0	22.5	3.3	6.7
	Total (100%)	100	40	30	30
Age	29-29	6.1	5.2	6.6	6.8
	30-39	26.5	35.9	23.4	17.2
	40-49	36.9	25.6	40.0	55.3
	50-59	26.5	30.8	30.0	17.3
	60-69	2.0	2.5	-	3.4
	Total (100%)	98	39	30	29
	Age average (in years)	43	43	43	43
Place of birth of entrepreneurs	Greater São Paulo area	43.9	41.1	50.0	41.4
	Interior of São Paulo	20.4	17.9	16.7	27.6
	Brazil - North East	2.0	5.1	-	-
	Brazil - South East	6.1	7.7	10.0	-
	Brazil - South	3.0	2.6	-	6.9
	Brazil - Midwest	1.0	-	3.3	-
	Another country	23.6	25.6	20.0	24.1
	Total (100%)	98	39	30	29
Place of birth of the father of the entrepreneurs	Greater São Paulo area	15.3	5.1	26.7	17.2
	Interior of São Paulo	16.3	10.3	20.0	20.7
	Brazil - North East	2.0	5.1	-	-
	Brazil - South East	8.2	10.3	13.3	-
	Brazil - South	2.0	2.6	-	3.5
	Brazil - Midwest	1.0	-	3.3	-
	Another country	55.2	66.6	36.7	58.6
	Total (100%)	98	39	30	29
Place of birth of the mother of the entrepreneurs	Greater São Paulo area	22.5	15.4	30.0	24.1
	Interior of São Paulo	21.4	18.0	26.7	20.7
	Brazil - North East	2.0	5.1	-	-
	Brazil - South East	6.1	7.7	10.0	-
	Brazil - South	2.0	2.6	-	3.4
	Brazil - Midwest	1.0	-	3.3	-
	Another country	45.0	51.2	30.0	51.8
	Total (100%)	98	39	30	29

Table II.18

Entrepreneurs: Paternal education, occupational status and sector (in %)

	Detailed list	Total	Sector		
			Clothing	Electronics	Mechanical Goods
Father's education	No education	5.1	7.7	-	6.9
	Incomplete primary	11.2	12.8	16.7	3.4
	Complete primary	40.9	46.1	26.7	48.3
	Complete junior high	19.4	20.5	13.3	24.2
	Complete technical high school	15.3	12.9	23.3	10.3
	Complete higher education/ post graduate	8.1	-	20.0	6.9
	Total (100%)	98	39	30	29
Father's occupational status (1)	01-02	13.5	15.4	3.3	22.2
	05	4.3	2.6	10.0	-
	06	13.5	12.8	13.4	14.8
	07	6.2	10.2	-	7.4
	08	29.2	38.4	30.0	14.8
	10	26.0	18.0	26.6	37.0
	12-14	7.3	2.6	16.7	3.8
	Total (100%)	96	39	30	27
	Average status	8	7	9	7
Industry/sector of activity	Industrial sector	48.4	41.0	50.0	57.1
	- Mechanics and/or related branch(2)	11.3	-	-	39.3
	- Electronics and/or related branch(3)	7.2	-	23.3	-
	- Clothing/textiles	11.3	20.5	6.7	3.5
	- Other branches of industry	18.6	20.5	20.0	14.3
	Service sector	34.0	35.9	40.0	25.0
	- Services	11.3	7.7	16.7	10.7
	- Commerce	17.5	28.2	6.6	14.3
	- Administration	5.2	-	16.7	-
	Agricultural sector	17.6	23.1	10.0	17.9
	Total (100%)	97	39	30	28

(1) S. scale, Annex F (small entrepreneurs like those interviewed belonged to status level 10).
(2) Includes metallurgy and transport equipment.
(3) Includes the entire electric and communications equipment industry.

Table II.19

Entrepreneurs: Longest-held paternal occupation (in %)

Status	Clothing	Electronics	Mechanical Goods
01	-	-	Agricultural worker(1)
03	Unsecured small-holder(1)	Unsecured small-holder(1)	Unsecured small-holder(1) Night watchman(1)
04	Driver(1) Weaver(1) Small farm owner(2)	-	Driver(1) Polisher(1) Small farm owner(2)
05	Painter(1)	Stone mason(1) Self-employed driver(2)	-
06	Stone mason(1) Shirt-maker(1) Baker(1) Foreman(1) Self-employed barber(1)	Bookkeeper(3) Electronic rigger(1)	Grange owner(2) Owner of a garage for bicycles(1) Fitter(1)
07	Army seargent(1) Mill foreman(1) Independent salesman(2)	-	Master cobbler(1) Independent salesman(1)
09	Farm administrator(1) Agronomics technician(1) Farm owner(3) Shop owner(7) Factory owner(1) Building contractor(2)	Shop owner(6) Farm owner(1) Factory owner(1) Manager(1)	Shopkeeper(4)
10	Factory owner(4) Shop owner(3)	Factory owner(5) Farm owner(1) Manager(2)	Factory owner(9) Building contractor(1)
12	Factory owner(1)	Factory owner(1) Dentist(1) Teacher(1)	Factory owner(1)
14	-	Manager(1) Engineer(1)	-

OBS.: a) The numbers in parenthesis indicate how frequently each occupation occurs.

b) The status of owners and managers varies according to company size; while the status of other professionals varies according to their occupational level - assistant, confirmed in a position, head of a section, etc. (see scale, Annex F).

Table II.20

Entrepreneurs: Main problems and limitations that they face at present (in %)

	Detailed list	Total	Sector		
			Clothing	Electronics	Mechanical Goods
Limitations due to lack of knowledge	None	$\boxed{54.0}$	48.7	$\boxed{63.3}$	$\boxed{51.7}$
	Some regarding:	46.0	$\boxed{51.3}$	36.7	48.3
	- technology	14.3	15.4	10.0	17.2
	- business administration, finance	14.3	15.4	13.4	13.8
	- marketing sales	8.2	5.1	10.0	10.3
	- general knowledge	4.1	7.7	3.3	-
	- several/in all areas	5.1	7.7	-	7.0
	Total (100%)	98	39	30	29
Problems/ difficulties	None	24.5	25.6	40.0	7.0
	Some, due to:	$\boxed{75.5}$	$\boxed{74.4}$	$\boxed{60.0}$	$\boxed{93.0}$
	- economic recession	30.6	18.0	33.3	44.8
	- credit/financing	23.5	33.3	16.7	17.2
	- taxes, expenses	8.1	5.1	-	20.7
	- other (bureaucracy cost of raw materials and manpower, competition)	13.3	18.0	10.0	10.3
	Total (100%)	98	39	30	29

Table II.21

Entrepreneurs: Their impressions concerning SENAI and other entities or programmes designed to assist small and medium-sized companies (in %)

	Detailed list	Total	Sector		
			Clothing	Electronics	Mechanical Goods
Entities or programmes designed to help small and medium-sized firms (SMEs)	Does not know of any	23.5	30.8	10.0	27.6
	Knows one, but did not seek its services	53.1	46.1	66.7	48.2
	Services requested but not given	11.2	7.7	10.0	17.2
	Services given, but results were not satisfactory	6.1	7.7	10.0	-
	Services offered with good results	6.1	7.7	3.3	7.0
	Total (100%)	98	39	30	29
SENAI	Does not know of any SENAI school	1.0	2.6	-	-
	Knows of it, but did not seek its services	58.2	64.1	60.0	48.3
	Services requested but not given	2.0	2.6	3.3	-
	Services given, but results were not satisfactory	5.1	5.1	6.7	3.4
	Services given, and results were good	10.2	12.8	6.7	10.3
	Did not request but has/had ties with SENAI	23.5	12.8	23.3	38.0
	- the firm employ(s/ed) a SENAI apprentice	16.4	12.8	16.7	20.7
	- is a former SENAI student	7.1	-	6.6	17.3
	Total (100%)	98	39	30	29

SME = small and medium-sized companies

Table II.22

Entrepreneurs: Past professional experience prior to becoming an entrepreneur (in %)

	Detailed list		Sector		
		Total	Clothing	Electronics	Mechanical Goods
Age at which they started to work (in years)	Less than 10	5.1	5.1	3.3	7.0
	10-11	6.2	7.7	6.7	3.4
	12-14	45.4	43.6	43.4	48.2
	15-17	21.7	23.1	13.3	27.6
	18-19	10.3	10.2	16.7	3.4
	20-24	8.2	7.7	13.3	3.4
	25 or more	3.1	2.6	3.3	7.0
	Total (100%)	97	39	30	29
	Average age (in years)	15	14	15	16
Number of jobs before becoming an entrepreneur	None (started as an entrepreneur)	7.1	5.2	13.3	3.5
	Had another job:	92.9	94.8	86.7	96.5
	- 1 job	12.2	10.3	10.0	17.2
	- 2 jobs	25.5	38.4	23.4	10.3
	- 3 jobs	16.4	25.6	16.7	3.5
	- 4 jobs	17.4	7.6	13.3	34.5
	- 5 jobs	10.2	10.3	13.3	6.9
	6 or more jobs	11.2	2.6	10.0	24.1
	Total (100%)	98	39	30	29
	Average number of jobs	3	3	4	4
Have been working as entrepreneurs for: (in months)	Up to 60	6.6	8.1	3.8	7.1
	61-120	20.8	21.7	19.2	21.5
	121-180	29.8	37.8	30.8	17.8
	181-240	20.8	16.2	23.1	25.0
	241-300	15.4	10.8	15.4	21.5
	301 or more	6.6	5.4	7.7	7.1
	Total (100%)	91	37	26	28
	Average time in months	177	151	187	197

Table II.23

Entrepreneurs: Companies previous to present one (in %)

	Detailed list		Sector		
		Total	Clothing	Electronics	Mechanical Goods
Number of companies they participated in	1	66.7	73.3	70.0	40.0
	2	33.3	26.7	30.0	60.0
	30	30	15	10	5
Span of activity (in months)	12-36	30.0	33.4	40.0	-
	37-60	16.7	20.0	10.0	20.0
	61-120	20.0	20.0	10.0	40.0
	121-180	23.3	13.3	30.0	40.0
	181 or more	10.0	13.3	10.0	-
	Total (100%)	30	15	10	5
	Average time (in months)	98	93	102	106
Industry	Present/related area	46.7	46.7	50.0	40.0
	Present and other(s)	20.0	20.0	30.0	-
	Other(s)	33.3	33.3	20.0	60.0
	Total (100%)	30	15	10	5
Size	Only small	90.0	93.3	80.0	100.0
	Small, medium, large	10.0	6.7	20.0	-
	Total (100%)	30	15	10	5
Company(ies) outcome	Nil (none still exists)	60.0	73.4	60.0	20.0
	Partial (1 of the companies still exists)	16.7	13.3	-	60.0
	Total (all of the companies still exist)	23.3	13.3	40.0	20.0
	Total (100%)	30	15	10	5

Table II.24

Entrepreneurs: Companies started after the present one (in %)

	Detailed list	Total	Sector		
			Clothing	Electronics	Mechanical Goods
Participated in another company after present one	Did not	$\boxed{66.7}$	$\boxed{64.1}$	$\boxed{62.1}$	$\boxed{75.0}$
	Did in:	33.3	35.9	37.9	25.0
	- 1 other company	22.0	23.1	24.2	18.0
	- 2 companies	8.3	7.7	10.3	7.0
	- 3 or more other companies	3.0	5.1	3.4	-
	Total (100%)	96	39	29	28
Outcome of these companies	Nil (none survived)	6.4	7.1	9.1	-
	Partial (some survived)	22.6	28.6	9.1	33.3
	Total (all survived)	$\boxed{71.0}$	$\boxed{64.3}$	$\boxed{81.8}$	$\boxed{66.7}$
	Total (100%)	31	14	11	6
Entrepreneur continues participating in other companies	No	13.3	15.4	-	28.6
	Yes, in some: in	$\boxed{86.7}$	$\boxed{84.6}$	$\boxed{100.0}$	$\boxed{71.4}$
	- 1 company	60.0	61.5	70.0	42.8
	- 2 companies	20.0	15.4	20.0	28.6
	- 3 or more companies	6.7	7.7	10.0	-
	Total (100%)	30	13	10	7
Industry of the company(ies) in which he participates	Same/or related branch	38.5	45.4	$\boxed{40.0}$	20.0
	Same/or other branch	11.5	-	30.0	-
	Other branch	$\boxed{50.0}$	$\boxed{54.6}$	30.0	$\boxed{80.0}$
	Total (100%)	26	11	10	5

Table II.25

Entrepreneurs: Initial situation within present company (in %)

	Detailed list	Total	Sector		
			Clothing	Electronics	Mechanical Goods
Started off by:	Inheriting/continuing the family business	3.3	-	10.0	-
	Founding the company	73.4	73.3	70.0	80.0
	Becoming a company associate	23.3	26.7	20.0	20.0
	Total (*) (100%)	30	15	10	5
Where the initial capital came from:	Own private money	55.2	46.7	77.8	40.0
	Property sale (previous company)	37.9	40.0	22.2	60.0
	Other	6.9	13.3	-	-
	Total (*) (100%)	29	15	9	5
Partners	Had none	16.7	20.0	-	40.0
	Had	83.3	80.0	100.0	60.0
	- 1 partner	43.3	60.0	30.0	20.0
	- 2 partners	26.7	6.7	60.0	20.0
	- 3-4 partners	13.3	13.3	10.0	20.0
	Total (*) (100%)	30	15	10	5
Previous association with partners	Kinship/friendship	44.0	66.6	20.0	33.3
	Kinship/friendship and professional	36.0	16.7	60.0	33.3
	Professional	20.0	16.7	20.0	33.3
	Total (*) (100%)	25	12	10	3
Have been in this company for (months)	Up to 12	3.1	5.1	-	3.4
	13-24	6.1	2.6	10.0	6.9
	37-60	12.2	2.6	20.0	17.2
	61-120	37.7	53.8	26.6	27.7
	121-180	24.5	15.4	30.0	31.0
	181-240	13.3	17.9	6.7	13.8
	241 or more	3.1	2.6	6.7	-
	Total (100%)	98	39	30	29
	Average time (in months)	124	133	117	118

(*) Only respondents who did not start off in this company.

Table II.26

Entrepreneurs: Occupational level (in %)

Occupational Level	Sex			Sector					
		Total		Clothing		Electronics		Mechanical Goods	
		N	%	N	%	N	%	N	%
2	Men	23	43.4	9	36.0	5	27.8	9	90.0
	Women	30	56.6	16	64.0	13	72.2	1	10.0
	Total	53	100.0	25	100.0	18	100.0	10	100.0
3	Men	12	50.0	6	46.1	5	50.0	1	100.0
	Women	12	50.0	7	53.9	5	50.0	-	-
	Total	24	100.0	13	100.0	10	100.0	1	100.0
4	Men	67	59.3	1	2.2	15	100.0	51	98.1
	Women	46	40.7	45	97.8	-	-	1	1.9
	Total	113	100.0	46	100.0	15	100.0	52	100.0
5	Men	33	73.3	4	25.0	10	100.0	19	100.0
	Women	12	26.7	12	75.0	-	-	-	-
	Total	45	100.0	16	100.0	10	100.0	19	100.0
6	Men	12	92.3	2	66.7	9	100.0	1	100.0
	Women	1	7.7	1	33.3	-	-	-	-
	Total	13	100.0	3	100.0	9	100.0	1	100.0
7	Men	21	91.3	-	-	16	88.9	5	100.0
	Women	2	8.7	-	-	2	11.1	-	-
	Total	23	100.0	-	-	18	100.0	5	100.0
8	Men	7	100.0	-	-	7	100.0	-	-
Total	Men	175	63.0	22	21.3	67	77.0	86	97.7
	Women	103	37.0	81	78.7	20	23.0	2	2.3
	Total	278	100.0	103	100.0	87	100.0	88	100.0

Occupational level: 2 = semi-skilled; 3 = head of a section, supervisor (for semi-skilled workers); 4 = skilled; 5 = foremen, masters; 6 = practical technicians; 7 = middle level technicians (having the corresponding degree); 8 = engineers.

Table II.27

Employee: Level and age (in %)

Level	Age	Total	Sector Clothing	 Electronics	 Mechanical Goods
Semi-skilled (2)	16-19	19.0	16.0	33.3	-
	20-24	19.0	20.0	27.8	-
	25-29	17.0	12.0	11.1	40.0
	30-34	24.4	36.0	5.6	30.0
	35-39	5.6	4.0	11.1	-
	40-49	9.4	8.0	11.1	10.0
	50 or more	5.6	4.0	-	20.0
	Total (100%)	53	25	18	10
	Average (in years)	30	30	26	35
Head of section/ Supervisor of semi-skilled (3)	16-19	4.2	7.7	-	-
	20-24	25.0	15.4	30.0	100.0
	25-29	16.7	30.7	-	-
	30-34	25.0	23.1	30.0	-
	35-39	20.8	15.4	30.0	-
	40-49	8.3	7.7	10.0	-
	Total (100%)	24	13	10	1
	Average (in years)	30	30	32	20
Skilled (4)	16-19	4.4	6.5	6.7	1.9
	20-24	22.2	11.0	39.9	27.0
	25-29	18.6	15.2	6.7	25.0
	30-34	22.2	26.1	6.7	23.0
	35-39	15.0	13.0	20.0	15.4
	40-49	14.1	21.7	20.0	5.8
	50 or more	3.5	6.5	-	1.9
	Total (100%)	113	46	15	52
	Average (in years)	31	33	30	30
Foremen/masters (5)	20-24	2.2	-	-	5.3
	25-29	9.0	-	20.0	10.5
	30-34	33.3	37.5	10.0	42.0
	35-39	17.8	37.5	10.0	5.3
	40-49	24.4	6.2	40.0	31.6
	50 or more	13.3	18.8	20.0	5.3
	Total (100%)	45	16	10	19
	Average (in years)	38	38	42	37
Practical technicians (6)	20-24	7.7	33.3	-	-
	25-29	15.4	-	11.2	100.0
	30-34	23.1	33.3	22.2	-
	35-39	15.4	-	22.2	-
	40-49	15.4	-	22.2	-
	50 or more	23.0	33.3	22.2	-
	Total (100%)	13	3	9	1
	Average (in years)	38	36	39	27
Middle level technicians (7)	16-19	4.3	-	5.6	-
	20-24	30.5	-	33.3	20.0
	25-29	26.2	-	22.2	40.0
	30-34	8.7	-	5.6	20.0
	35-39	13.0	-	11.1	20.0
	40-49	13.3	-	16.6	-
	50 or more	4.3	-	5.6	-
	Total (100%)	23	-	18	5
	Average (in years)	30	-	30	29
Engineers (8)	25-29	42.8	-	42.8	-
	30-34	14.4	-	14.4	-
	35-39	42.8	-	42.8	-
	Total (100%)	7	-	7	-
	Average (in years)	32	-	32	-
Total	16-19	6.1	7.8	9.2	1.1
	20-24	18.0	12.6	23.0	19.3
	25-29	17.6	13.6	15.0	25.0
	30-34	23.5	30.0	11.5	27.3
	35-39	14.7	14.6	18.4	11.4
	40-49	14.0	13.6	17.2	11.4
	50 or more	6.1	7.8	5.7	4.5
	Total (100%)	278	103	87	88
	Average (in years)	32	33	32	32

Table II.28

Employee: Interviewees' place of birth and paternal place of birth (in %)

Place of birth		Total	Sector		
			Clothing	Electronics	Mechanical Goods
Employee's birthplace	Greater São Paulo area	33.1	27.1	34.5	38.7
	Interior of São Paulo	29.2	28.2	32.1	27.2
	Brazil - North East	18.0	22.4	13.7	17.1
	Brazil - South East	9.0	10.7	8.1	7.9
	Brazil - South	6.4	6.8	6.9	5.6
	Brazil - North/Middle West	1.0	1.9	1.2	-
	Another country	3.3	2.9	3.5	3.5
	Total (100%)	278	103	87	88
Employee's father's birthplace	Greater São Paulo area	14.0	13.6	14.9	13.7
	Interior of São Paulo	29.5	27.2	29.9	31.8
	Brazil - North East	24.8	27.2	24.2	22.7
	Brazil - South East	12.2	12.6	12.6	11.3
	Brazil - South	4.3	5.9	1.2	5.6
	Brazil - North/Middle West	0.8	0.9	1.2	-
	Another country	13.3	10.7	16.0	13.7
	No answer	1.1	1.9	-	1.2
	Total (100%)	278	103	87	88

Table 11.29

Employee's father's field of activity, occupational status and education (in %)

Detailed List		Total	Sector		
			Clothing	Electronics	Mechanical Goods
Employee's father's field of activity	Industrial sector	$\boxed{40.4}$	$\boxed{38.4}$	$\boxed{43.7}$	$\boxed{39.5}$
	- mechanical goods	13.3	8.1	16.1	16.3
	- furniture/wood	5.8	6.1	5.7	5.8
	- textiles/clothes	4.4	5.0	4.6	3.5
	- construction	11.1	14.2	9.3	9.3
	- other	5.8	5.0	8.0	4.6
	Tertiary sector	$\boxed{25.4}$	20.2	$\boxed{35.6}$	21.0
	- Transport service	6.0	5.0	5.7	7.0
	- Other services	6.2	4.0	10.3	4.7
	- Commerce	9.2	9.2	12.6	5.8
	- Administration	4.0	2.0	7.0	3.5
	Agricultural sector	$\boxed{34.2}$	$\boxed{41.4}$	20.7	$\boxed{39.5}$
	Total (100%)	272	99	87	86
Paternal occupational status (*)	01-02	20.1	20.8	17.4	22.0
	03	14.6	24.6	7.0	10.5
	04	21.0	20.8	19.8	22.0
	05-06	26.0	20.8	30.2	28.0
	07-08	13.5	11.0	16.3	14.0
	09-10	3.3	1.0	5.8	3.5
	11-15	1.5	1.0	3.5	-
	Total (100%)	273	101	86	86
	Paternal average status	4	4	5	4
Education	No learning/illiterate	30.4	35.5	25.6	29.0
	Incomplete primary (Grade 1 to 3)	19.4	23.8	17.4	16.3
	Complete primary (Grade 4)	36.6	30.7	33.7	46.5
	Incomplete/complete junior high-school (Grade 5 to 8)	6.6	6.0	7.0	7.0
	Incomplete/complete high-school	4.0	2.0	9.3	1.2
	Incomplete/complete higher education	3.0	2.0	7.0	-
	Total (100%)	273	101	86	86

(*) See scale, Annex F.

Junior high school - former Ginesio; High school - former Colegial.

Table II.30

Employee: Schooling according to age, sex, place of birth and paternal education (in %)

Variables	Detailed List	Schooling level (number of years of schooling)					
		Incomplete Primary (1-3)	Primary School (4)	Junior (5-8)	High school (9-11)	Higher education	Total (100%)
Sex	Men	7.4	44.6	22.9	21.1	4.0	175
	Women	12.6	61.2	20.4	4.9	1.0	103
Age	16-19	5.9	47.1	47.1	-	-	17
	20-29	5.1	45.5	25.3	20.2	4.0	99
	30-39	9.4	59.4	15.1	12.3	3.8	106
	40-49	17.9	48.7	17.9	15.4	-	39
	50 or more	17.6	35.3	29.4	17.6	-	17
Father's education (completed)	No schooling/incomplete primary school	15.4	58.8	19.9	5.1	0.7	136
	Primary	3.8	53.8	25.0	16.3	1.0	104
	Junior high-school	-	7.1	35.7	57.1	-	14
	High-school	-	-	25.0	58.3	16.7	12
	Higher education	-	-	-	42.9	57.1	7
Place of birth	State capital/Greater São Paulo	2.2	42.4	25.0	18.5	12.0	92
	Interior of São Paulo	6.2	59.3	21.0	9.9	3.7	81
	Other state/country	18.1	51.4	20.0	6.7	3.8	105
	Total	9.4	50.7	21.9	15.1	2.9	278

Table II.31

Employees: The way they learnt their job (in %)

Possibilities	Total Order				Clothing Order				Electronics Order				Mechanical Goods Order			
	1st	2nd	3rd	Total	1st	2nd	3rd	Total	1st	2nd	3rd	Total	1st	2nd	3rd	Total
Practice - at home	8.3	6.3	9.0	7.8	20.6	13.9	20.0	18.7	1.2	5.3	5.6	3.2	1.1	-	-	0.7
Practice - in the present company	34.3	28.5	33.4	32.4	18.7	27.9	30.0	22.0	46.0	30.3	27.8	38.6	40.9	26.7	60.0	37.0
Practice - in another company	32.2	25.0	24.2	29.3	41.1	27.9	-	34.8	18.3	25.0	38.8	22.9	35.3	22.2	20.0	30.4
Course/training offered by this or another company	1.0	2.7	3.0	1.7	1.9	4.6	-	2.5	1.2	3.6	5.6	2.4	-	-	-	-
Course/training at school	22.8	36.1	30.4	27.5	13.8	23.3	50.0	18.7	33.3	34.0	22.2	32.3	22.7	51.1	20.0	31.9
Other	1.4	1.4	-	1.3	3.9	2.4	-	3.3	-	1.8	-	0.6	-	-	-	-
Total (100%)	277	144	33	454	102	43	10	155	87	56	18	161	88	45	5	138

Obs: This question allowed a choice between three possibilities, in order of importance with respect to learning the present job.

Table II.32

Employee: Vocational training (in %)

Detailed List		Total	Sector		
			Clothing	Electronics	Mechanical Goods
Proportion of interviewees who completed courses at SENAI(*)	Occupational level				
	02	16.7	-	16.7	33.3
	03	25.0	20.0	33.3	-
	04	64.8	36.8	71.5	82.1
	05	55.1	30.8	100.0	63.7
	06	36.3	50.0	25.0	100.0
	07	16.7	-	7.1	50.0
	08	20.0	-	20.0	-
	Total	46.0	30.9	33.3	72.3
Average number of hours completed at SENAI	Occupational level				
	2	92	-	123	120
	3	56	17	120	-
	4	979	190	1 043	1 499
	5	628	66	1 578	860
	6	372	130	136	2 745
	7	391	-	43	1 608
	8	8	-	8	-
	Average	612	114	376	1 297
Institution in charge of longest course taken	SENAI	40.7	30.0	27.1	63.9
	SESI/SESC	3.7	10.0	2.0	-
	Independent school/correspondence course	40.0	50.0	39.6	31.9
	Technical school - public/private	8.9	-	20.8	4.2
	Other	6.7	10.0	10.5	-
	Total (100%)	135	40	48	47
Institution in charge of longest course taken and most closely related to present job	SENAI	43.2	33.3	30.2	63.0
	SESI/SESC	3.2	11.1	-	-
	Independent school/correspondence course	39.2	50.0	37.2	32.7
	Technical school - public/private	9.6	-	23.3	4.3
	Other	4.8	5.6	9.3	-
	Total (100%)	125	36	43	46

(*) Considering the total number of interviewees at each level who completed courses.

Table II.33

Employees: A description of their professional experience (in %)

Detailed List			Sector		
		Total	Clothing	Electronics	Mechanical Goods
Age at which they started work	Less than 10	7.2	5.8	5.7	10.2
	10-11	5.4	4.0	5.7	6.8
	12-13	18.3	21.3	15.0	18.1
	14	23.7	16.5	23.0	33.0
	15-17	25.6	29.1	24.1	22.8
	18-19	9.0	7.8	11.5	8.0
	20-24	8.3	8.7	15.0	1.1
	25 or more	2.5	6.8	-	-
	Total (n = 100%)	278	103	87	88
	Average age (in years)	15	16	15	14
Seniority (in months)	Up to 60	12.2	13.6	18.4	4.5
	61-120	20.1	17.5	21.8	21.6
	121-180	19.1	23.4	11.5	21.6
	181-240	15.8	15.5	12.6	19.3
	241-360	24.2	21.3	24.2	27.3
	361 or more	8.6	8.7	11.5	5.7
	Total (n = 100%)	278	103	87	88
	Average time (in months)	197	188	196	209
Number of jobs held before this one	Had no other	11.5	9.7	16.0	9.0
	Had:	88.5	90.3	84.0	91.0
	1	17.0	16.5	18.3	16.0
	2	21.1	22.2	20.7	20.4
	3	15.7	20.4	15.0	11.4
	4	13.7	17.5	10.3	12.5
	5	7.2	7.8	5.8	8.0
	6	5.4	3.9	7.0	5.7
	7	3.0	1.0	4.5	3.4
	8	1.8	1.0	1.2	3.4
	9 or more	3.6	-	1.2	10.2
	Total (n = 100%)	278	103	87	88
	Average number of jobs	3	3	3	4
Job in which he worked for the longest amount of time	Present job	53.2	45.6	64.4	51.1
	Previous job	13.0	14.6	11.5	12.5
	First job	20.8	27.2	13.8	20.4
	Other	13.0	12.6	10.3	16.0
	Total (100%)	278	103	87	88

Table II.34

Employees: Characteristics of the first job (in %)

	Detailed List	Total	Sector		
			Clothing	Electronics	Mechanical Goods
Field of activity (industry)	Industrial sector	69.8	75.7	67.8	64.8
	Mechanics and related industries	15.5	1.9	12.7	34.1
	Electronics and related industries	14.0	1.0	31.0	12.5
	Clothing and related industries	27.0	67.0	4.6	2.3
	Other industries	13.3	5.8	19.5	15.9
	Tertiary sector	20.2	17.5	24.2	19.3
	Services	12.2	14.6	15.0	6.8
	Commerce	5.8	1.9	5.8	10.2
	Administration and other	2.2	1.0	3.4	2.3
	Agricultural sector	10.0	6.8	8.0	15.9
	Total (100%)	278	103	87	88
Seniority	Average (in months)	59	65	50	60
Company size	Micro (0-4 employees)	17.6	11.6	13.8	28.4
	Small (5-99)	39.3	39.4	41.4	34.1
	Medium (100-499)	20.1	37.5	24.1	15.9
	Large (500 or more)	10.8	23.4	8.0	18.2
	Not applicable (free-lance, maid, rural worker)	12.2	19.4	12.7	3.4
	Total (100%)	278	103	87	88
Worked as:	Employee	75.9	69.9	81.7	77.2
	Family worker	7.6	5.8	3.4	13.7
	Maid	4.3	7.8	3.4	1.1
	Rural worker	4.7	3.8	4.6	5.8
	Self-employed	6.1	10.7	5.7	1.1
	Owner partner/other	1.4	2.0	1.2	1.1
	Total (100%)	278	103	87	88
Occupation held	Same as now	14.7	26.2	9.2	6.8
	Similar one	33.1	32.0	31.0	36.4
	Another one in production	17.3	12.6	25.3	14.8
	Another occupation, not in production	34.9	29.2	34.5	42.0
	Total (100%)	278	103	87	88
Occupational status	01-02	34.1	29.1	29.9	44.3
	03-04	37.1	35.9	36.8	38.6
	05-06	24.4	32.0	25.3	14.8
	07-11	4.4	3.0	8.0	2.3
	Total (100%)	278	103	87	88
	"Average" status	4	4	4	3

Table II.35

Employees: Characteristics of the previous job (in %)

	Detailed List	Total	Sector		
			Clothing	Electronics	Mechanical Goods
Field of activity (industry)	Industrial sector	83.4	86.0	76.7	86.3
	Mechanics and related industries	23.6	-	17.8	56.3
	Electronics and related industries	14.3	-	37.0	10.0
	Clothing and related industries	34.1	78.5	12.3	2.5
	Other industries	11.4	7.5	9.6	17.5
	Tertiary sector	15.8	14.0	21.9	12.5
	Services	9.8	7.6	16.4	6.3
	Commerce	5.2	6.4	4.1	5.0
	Administration and other	0.8	-	1.4	1.2
	Agricultural sector	0.8	-	1.4	1.2
	Total (100%)	246	93	73	80
Company size	Micro (0-4 employees)	12.2	11.9	16.5	8.8
	Small (5-99)	39.5	43.0	30.1	43.8
	Medium (100-499)	26.4	28.0	24.6	26.2
	Large (500 or more)	16.2	9.6	20.5	20.0
	Not applicable (free-lance, maid, rural worker)	5.7	7.5	8.3	1.2
	Total (100%)	246	93	73	80
Seniority	Average (in months)	39	40	40	37
Works as:	Employee	88.6	88.1	82.0	95.0
	Family worker	2.5	1.1	2.8	3.8
	Self-employed	4.4	5.4	6.9	1.2
	Partner/owner	2.5	2.1	5.5	-
	Other (maid, rural worker)	2.0	3.3	2.8	-
	Total (100%)	246	93	73	80
Occupation	Has the same occupation	36.2	51.6	22.0	31.3
	Has a similar occupation	35.7	28.0	41.0	40.0
	Has another occupation in production	12.2	4.3	20.6	13.7
	Has another occupation, not in production	15.9	16.1	16.4	15.0
	Total (100%)	246	93	73	80
Occupational status	Less than in present job	25.7	25.9	31.6	20.0
	Same as in present job	60.9	64.5	52.0	65.0
	Above that of present job	13.4	9.6	16.4	15.0
	Total (100%)	246	93	73	80
	01-02	12.1	9.7	13.7	13.8
	03-04	29.3	35.4	27.4	23.8
	05-06	41.1	43.0	24.7	53.7
	07-08	15.5	11.9	27.3	8.7
	10-11	2.0	-	6.9	-
	Total (100%)	246	93	73	80
	Average status	5	5	6	5

• 52 interviewees had not had a previous job.

Table II.36

Employee salary distribution and average salary according to occupational level, sector and company size (in %)

Detailed list		Interviewees' occupational level							
		2	3	4	5	6	7	8	Total
Salary distribution expressed in terms of minimum wage (in %)	1 to 2	$\boxed{49.0}$	29.2	13.2	-	-	-	-	17.3
	plus 2 to 3	18.9	20.8	$\boxed{29.2}$	6.7	-	4.3	-	18.7
	plus 3 to 5	20.8	12.5	$\boxed{28.3}$	22.2	30.8	21.7	-	23.4
	plus 5 to 10	11.3	$\boxed{37.5}$	20.4	$\boxed{42.2}$	$\boxed{61.5}$	30.5	28.6	26.6
	plus 10	-	-	8.9	28.9	7.7	$\boxed{43.5}$	$\boxed{71.4}$	14.0
	Total (100%)	53	24	113	45	13	23	7	278
Average salary in (MW) (*)	Sector								
	Clothing	2.6	4.2	2.8	5.6	6.4	-	-	3.5
	Electronics	2.5	4.6	5.1	9.6	7.2	9.8	15.7	7.1
	Mechanical Goods	3.6	(**)	5.7	8.8	(**)	11.1	-	6.4
	Company size								
	0-19	2.5	3.0	3.8	6.7	6.8	6.1	-	4.1
	20-49	2.5	4.7	4.1	7.5	7.1	9.8	20.2	5.6
	50-99	4.0	5.0	6.3	10.2	6.2	12.4	9.8	7.2
	Overall average	2.7	4.2	4.5	7.8	6.7	10.1	15.7	5.5

(*) MW = Minimum wage = Cr$ 35,000.00 until 31.10.83.

(**) There was only one such answer.

Table II.37

MULTIPLE REGRESSION: DEPENDENT VARIABLES LOG OF MONTHLY EARNINGS

	Multiple R	R square	RSQ change	Simple R	B	Beta
Occupational Level	0.57732	0.33330	0.33330	0.57732	0.0524	0.26863
Sex	0.66018	0.43584	0.10255	-0.48914	-0.1289	0.19914
Age	0.71582	0.51240	0.07655	0.33752	0.0078	0.24528
Seniority in the firm	0.73903	0.54616	0.03376	0.37878	0.0011	0.23639
Number of years of study	0.75445	0.56919	0.02303	0.39037	0.0188	0.22173
Size of the firm	0.76476	0.58486	0.01566	0.11520	0.1965	0.13369
Mechanics sector	0.77268	0.59704	0.01218	0.19579	0.0838	0.12456
Length of vocational training	0.77812	0.60547	0.00843	0.33574	0.0002	0.09598
Born in São Paulo State (interior)	0.78238	0.61212	0.00665	0.13443	0.0478	0.06968
Born outside the country	0.78610	0.61796	0.00584	0.16073	0.1237	0.07057
Training in the firm	0.78892	0.62239	•	0.10999	•	•
Training in SENAI	0.79058	0.62502	•	0.16794	•	•
Type of secondary education	0.79251	0.62808	•	0.24272	•	•
Born City of São Paulo	0.79334	0.62939	•	0.04828	•	•
Father's education	0.79374	0.63002	•	0.21806	•	•
Electronics sector	0.79380	0.63011	•	0.20644	•	•
Independent schools	0.79382	0.63015	•	0.08292	•	•
Father's school	0.79383	0.63017	•	0.13396	•	•
					1.026755	

• Not significant at 5 per cent level.

R^2 = 0.630; R^2 adjusted = 0.604; N = 274; F = 24.139

Table II.30

Correlation Coefficients Between Variables

	Employee number of years of study	Sex	Age	Father's education	Born in São Paulo city	Born in the interior of SP State	Born abroad	Number of hours of vocational training	Number of training courses completed	Stream in secondary establishment	Seniority in the firm	Occupational level	Electronic sector	Mechanical goods sector	Size	Earnings
Employee's number of years of study	1															
Sex	-0.268	1														
Age	-0.177	0.008	1													
Father's education	0.498	-0.104	0.140	1												
Born in Sao Paulo City	0.281	-0.164	-0.202	0.1055	1											
Born in interior of SP State	-0.063	-0.008	0.129	-0.096	-0.449	1										
Born abroad	0.017	-0.098	0.200	0.013	-0.128	-0.1181	1									
Number of hours of vocational training	0.354	-0.303	-0.058	0.158	0.219	0.007	0.028	1								
Number of training courses completed	0.367	-0.173	0.080	0.225	0.075	0.079	0.0022	0.560	1							
Stream in secondary establishment	0.389	-0.149	-0.052	0.1267	0.1525	-0.030	0.018	0.023	0.036	1						
Seniority in the firm	-0.0654	-0.183	0.327	0.0246	-0.0181	0.053	0.039	-0.091	-0.0879	0.059	1					
Occupational level	0.569	-0.322	0.143	0.3029	0.179	0.069	0.003	0.366	0.432	0.293	0.172	1				
Electronic sector	0.343	-0.207	-0.0177	0.193	0.079	0.05	0.002	0.123	0.113	0.220	0.115	0.288	1			
Mechanical sector	-0.079	-0.494	-0.047	-0.107	0.079	-0.036	0.007	0.191	-0.001	-0.036	0.051	0.006	-0.065	1		
Size	-0.0022	0.099	0.085	-0.002	-0.063	0.067	0.061	-0.007	-0.007	0.005	0.020	0.037	0.113	-0.219	1	
Earnings	0.3905	-0.489	0.337	0.218	0.068	0.1344	0.1607	0.335		0.242	0.378	0.577	0.206	0.195	0.115	1

N = 276

Table II.39

Significant correlation coefficients between selected variables of firm's performance and their head's characteristics by sector

	Turnover	Size	Capital	Dynamism	Increase in turnover	Productivity
Clothing						
Entrepreneur's number of years of study	0.387	0.436	-	0.402	0.316	-
Father's number of years of study	-	-	-	0.297	-	-
Father's occupational status	0.563	0.604	0.513	0.378	-	-
Vocational training	0.428	-	0.720	-	-	0.300
Electronics						
Entrepreneur's number of years of study	-	-	-	-	-	-
Father's number of years of study	0.547	0.521	-	0.314	-	-
Father's occupational status	0.406	0.445	-	0.471	-	-
Vocational training	-	-	-	-	-	-
Most important job	0.401	0.432	-	-	-	-
Mechanical Goods						
Entrepreneur's number of years of study	0.341	0.374	-	0.481	-	-
Father's number of years of study	0.585	0.458	0.568	0.597	-	-
Father's occupational status	0.395	-	0.337	-	-	-
Vocational training	-	-	-	-	-	-
First job	-	-	0.330	-	-	-
Most important job	-	-	0.323	-	-	-

Only correlation coefficients significant at the 5 per cent level have been indicated.

ANNEX B

INFORMATION AND DEFINITIONS RELATIVE TO SENAI(1)

1. History and organisation

The National Industrial Service of Apprenticeship - SENAI(2) is an institution set up to prepare employees for jobs in the Brazilian industrial sector. It was created in January 1942 by a bill passed under Federal Law No. 4.048. This bill stipulated the institution's goals and sources of revenue. It also decreed that the administrative aspects of SENAI would be handled by the National Industrial Confederation - CNI(3).

SENAI is a private legal entity financed by means of parafiscal contributions, and offering services of public or social interest. SENAI is supervised by the Union Court of Accounts(4) which is an auxiliary

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1. Servico Nacional de Aprendizagem Industrial cf - "SENAI - an institution which promotes vocational training".

2. SENAI - National Industrial Training Service.

3. CNI - Confederacão Nacional de Industria

4. Tribunal de Contas da Uniao.

instrument of Congress in charge of the Union's finance and budget, as well as partly private, partly public companies, public companies and foundations.

SENAI is active throughout the whole of Brazil on a federative basis. At present it has 22 Regional Departments and one National Department. Each Regional Department is in charge of SENAI activities within a given state of the federation, as well as in the Federal District itself. There are only two Regional Departments in charge of activities within two states at the same time, as well as within one Brazilian territory.

The National Department has three basic responsibilities: it coordinates the execution of norms and policies laid down by SENAI's National Council; it provides technical assistance to the Regional Departments, and it represents the institution legally. All decisions concerning SENAI's activities within a given state fall within the jurisdiction of the Regional Departments, from selecting and planning SENAI's programmes to setting up professional training units.

Each Regional Department has its own network of (permanent) training units, and there are also technical schools in five Brazilian states - São Paulo, Rio de Janeiro, Minas Gerais, Parana and Rio Grande do Sul. SENAI also has a system of mobile training units operating in those states without permanent training units. These mobile units specialise in meeting the specific needs of local company employees in the shortest possible time.

In 1982, SENAI's operational network was made up of 328 units located throughout the entire country. 146 of these units were run in coordination with different companies,(1) and 24 others were run in coordination with

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1. These units are financed by the companies and are exempted from paying fees to SENAI in order to channel investments and savings towards their own training programmes. This sort of agreement is made with companies whose needs cannot easily be attended to by SENAI, either because of location or specificity of requirements. In such cases, SENAI stipulates how the unit must be run, approves the vocational training programme, or curriculum, supervises teaching methods, and the use of the resources that have been agreed upon.

several institutions. Altogether, 724 068 students were enrolled in SENAI's education and training courses.

2. Economic activities linked to SENAI

At the same time as the federal government set up SENAI, it established specific linkages with certain economic activities. These linkages, set up by means of specific legislation, laid down two basic principles.

(a) the companies included in these economic activities are required to pay SENAI a monthly fee; and

(b) they are also obliged to enrol apprentices(1) for courses at the institution's schools. The number of apprentices should be equivalent to a minimum of 5 per cent and a maximum of 15 per cent of the total number of skilled workers within each company - those with jobs requiring some sort of vocational training.

The scope of SENAI's activities is not limited to the actual industries themselves, but covers other activities in the secondary sector, such as transport, communication, repair and maintenance services.

3. Source of revenue and how it is applied

The revenue for running SENAI is obtained by means of monthly payments made by the companies as described above. These companies are obliged to pay 1 per cent of the total remuneration of their employees up to a ceiling presently fixed at 1 710.69 CR$ per employee.(2) This sum, called the general contribution (contribuição geral), is collected by the Social Security Financial Administration Institution - IAPAS(3), which is an

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1. We define "trainee" as an employee between the ages of 14 to 18 and who either receives on-the-job training, or is sent to one of SENAI's schools.

2. Equivalent to US$2.50, according to the rate given on 12.09.83.

3. Instituto de Administração Financeira da Previdência e Assistência Social.

administrative body of the Ministry of Social Security. IAPAS retains 1 per cent of the general contribution for its operational expenses.

Another source of revenue is the so-called additional contribution (contribuição adicional), payed by companies employing more than 500 people. This contribution is supervised and collected directly by SENAI. it is calculated at 0.2 per cent of the salary of all company employees, up to a ceiling presently fixed at 1 391.04 CR$ per employee.

4. Present scope of activities

In order to satisfy the industrial sector's demand for manpower, SENAI's scope of activities covers two areas:

- education
- training.(1)

The so-called educational programmes are designed to allow employees to carry out a specific activity in any company, following a necessary period of readjustment to adapt to that particular company's work methods. These programmes are generally rather long, and the course-work is methodical and systematic.

Training programmes, on the other hand, are set up to train employees for a job in a specific company. Training usually takes place on the job, in a real-life situation. These programmes are usually rather short, and aim at supplying a company with staff immediately.

Up to 1982, the following educational courses were given by SENAI-SP:(2)

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1. As from 01.01.83, education and training programmes were called "general programmes" and "specific programmes", respectively.

2. As from 01.01.83, the names of some courses were changed: CAP became TOA = occupational training and improvement course; CEP became TOE = occupational training and specialisation course; CQP-I became TOB = basic occupational training course or TOF = occupational training and education.

(a) Industrial Apprenticeship Courses (Curso de Aprendizagem Industrial - CAI): for 14 to 18 year-olds who are already employed as trainees, or who are on a company's waiting list. CAI applicants have to have completed the first four years of first-level education (primary school). Different courses are offered according to the level of the applicant. Classroom work is followed up by a period of work in the company itself. The length of the course varies between two to six semesters, according to the job being taught. Trainees attend day-school on a full-time basis.

(b) Vocational Training Course (Curso de Qualificação Profissional - CQP-I): provides the skills and knowledge required for employment in a particular occupation to employees who are over 14 years of age. 55 to 760 classroom hours are required, and trainees usually attend night-school.

(c) Further Training Course (Curso de Aperfeiçoamento Profissional - CAP): designed for skilled workers who wish to update or improve their skills and knowledge. The length of the course varies depending on the programme offered. Employees usually attend night-school.

(d) Vocational Specialisation Courses (Curso de Especialização profissional - CEP): designed for skilled workers, who wish to obtain a more specialised knowledge of a particular task or aspect of their job. In practice, this course trains employees for an entirely new job. Employees also usually attend night-school classes.

(e) Secondary Technical Studies or Secondary Level Vocational Aptitude Courses (Habilitação Profissional em nível de 2°grau ou Curso Técnico - HP): designed for graduates of eight years first level education who wish to become middle level technicians. These courses last for four years (three years at school and one year of on-the-job training, supervised by SENAI). Employees attend day-school on a full-time basis. At the end of the third year, students may enrol for university entrance examinations, as the SENAI technical school's curriculum fulfills the same requirements as regular secondary schools.

(f) Special Technical Courses: Secondary Level and beyond (Curso Técnico Especial em nivel de 2°grau - CQP-IV): with a few exceptions, this course is designed to train employees who have graduated from secondary education. Vocational training only is given. There are 1 200 hours of class-work on average, and 900 hours of on-the-job training. The programme lasts for one-and-a half to two years. Classes operate on a full-time schedule, but employees may opt for either day- or night-school.

5. Occupational levels according to SENAI's classification

(a) Administrative occupations: permanent employees at any level who are not involved in production (e.g. book-keeper, errand-boy, secretary, accountant);

(b) Unskilled workers: unskilled manual workers employed in production (e.g. office-boy, dresser, burnisher, machine-cleaner);

(c) Semi-skilled occupations: employees in production with jobs that require dexterity (fast, precise and repetitive movements). These skills are generally acquired on the job (e.g. assembly-line welders, automatic lathe-turners, machine lubricators);

(d) Skilled occupations: employees in production in occupations that require logical thinking, coordination, visual and auditory acuity and responsibility for expensive material and equipment. These jobs must be learned either through course-work and training, or else through long years of experience (e.g. turner, electrician, toolmaker);

(e) Technicians, technologists, engineers and other professional level occupations linked with production: professionals with an intermediate or higher level education, who are usually trained for the job they hold (e.g. chemical technician, laboratory technician, project designer, mechanical engineer).

ANNEX C

SOME INFORMATION ON THE DATA USED

Most of the data used in this study was obtained from the following sources:

(a) Two types of periodical studies done by the F.IBGE: - Brazilian Geographic and Statistics Foundation Institute (Fundação Instituto Brasileiro de Geografia e Estatística):

- Household and/or demographic surveys: population census and national sample-based household surveys PNAD (Pesquisa Nacional por Amostra de Domicílios);
- economic surveys or surveys within firms: agricultural, industrial and trade and services censuses.

Household door-to-door surveys obviously have more complete information concerning the labour force than economic surveys which, like the other types of surveys discussed below, only cover personnel in companies or undertakings.

(b) SENAI-SP surveys on the labour market, which specifically cover those aspects dealing with demand for skilled manpower:

- These surveys are done at the municipal level, and they cover all industrial undertakings that employ five or more employees. They supply information for the period 1978 to 1982 on 71 of the State's industrial centres, as well as on the state capital and practically the entire metropolitan area. 102 municipalities were included in these surveys, encompassing 64 per cent of businesses in the state of São Paulo, and 56 per cent of São Paulo's industrial manpower.
- These surveys are carried out on a continuous basis; data from previous surveys is updated, and surveys on new areas are done.

(c) Data supplied by companies in compliance with legal or fiscal provisions. Under this heading, we include data on the two-thirds Law, on the PIS and RAIS, explained below.

RAIS - Annual Social Information Report (Relação Anual de Informações Sociais) (Decree No. 76 900, issues on 23.12.75).

- This was instigated in 1975, in order to include information on the PIS, the two-thirds Law, and other company obligations.
- The following have to make a declaration to RAIS:
  - . companies, listing the information by separate establishments;
  - . self-employed workers and professional people who have employees in their pay;
  - . other types of employers (in subsidiary companies, branch offices and joint stock companies).
- Data processing for RAIS is done by SERPRO - Federal Data Processing Service (Serviço Federal de Processamento de Dados). Access to this information can be obtained with the permission of RAIS' "Management Group", through the Ministry of Labour.
- This information makes it possible to classify different sorts of establishments - free-lance workers may also be defined as such - and the

personnel they employ (according to sex, age, place of birth, education, occupation, salary, marital status).

- The RAIS' main problem area, which was practically the same as that of the two-thirds Law and the PIS, is as follows:
    - It does not cover all establishments because most micro and small-sized companies do not make out a declaration to RAIS: in 1980 RAIS admitted that there were 40 376 establishments in the State of São Paulo and 18 155 in the state capital for which it had *no* data, as opposed to 52 146 - in the State - and 24 853 - in the capital - for which *it did*. On the whole, though, the information supplied by RAIS is more complete than that collected by the 1980 industrial census, for example. RAIS' weak spot occurs only in relation to data on small establishments. The industrial census, which only included data on businesses or companies, excluding self-employed workers and professionals employing five or more employees, in 1980 registered 40 977 small establishments in the state of São Paulo, employing 743 698 people, while RAIS registered only 27 502 such establishments employing 619 146 people (see following table).
    - RAIS' margin of error is much smaller in relation to the number of employees, precisely because non-response occurs in small establishments.
    - Not all companies comply with the regulation that requires them to make out a separate declaration for each establishment; some include information on subsidiary companies in their declaration for the parent company, even when these subsidiaries are located in a different part of the country altogether.

State of São Paulo and State Capital - 1975-80
Manufacturing Industries: number of establishments and personnel employed by them according to various sources of data

	Sources/Years	State of São Paulo		State Capital	
		Establishments	Personnel employed	Establishments	Personnel employed
Total number of establishments	Industrial Census 1975	59 600	1 815 065	24 780	823 512
	PIS 1975	47 772	1 815 448	23 008	855 315
	2/3s Law Report 1975	-	1 918 979	-	-
	SENAI surveys 1976-77	-	-	14 472	909 657
	PNAD 1976	-	2 253 572	-	-
	Industrial Census 1980	45 752	2 231 219	-	-
	Population Census 1980	-	3 071 483	-	-
	RAIS 1980	52 146	2 468 683	24 853	1 046 570
	SENAI surveys 1980-81	-	-	15 604	1 153 290
Small establishments and the number of people employed in them	Industrial Census 1975	34 290	720 030	-	-
	PIS 1975	20 803	458 406	11 418	260 851
	SENAI surveys 1976-77	-	-	12 318	290 935
	Industrial Census 1980	40 977	743 698	-	-
	RAIS 1980	27 502	619 146	14 285	316 636
	SENAI surveys 1980-81	-	-	13 247	332 402
Establishments for which there was no information	PIS 1975	10 730	-	5 372	-
	RAIS 1980	40 376	-	18 155	-

The Two-thirds Law Report (Decree Law No. 5.452, issued 01.05.43)

- This report was in force until 1975, and in 1976 it was incorporated into RAIS.
- Its main objective was to keep track of the number of foreign workers in companies, so that they did not exceed one-third of the total number of employees in the company (based on the total number of (registered) employees as well as on those on the payroll).
- It covered neither rural industry, nor establishments with less than three employees.
- Two types of form were filled out once a year and sent to the Ministry of Labour by the company in question, giving details on the following:
  - . the company files, with all sorts of information concerning the company; and
  - . the list of employees, with separate information on each worker in the company (according to sex, age, nationality, education, salary and other factors).
- Data from the list of employees obtained from the São Paulo University Economic Survey Foundation Institute -FIPE (Fundação Instituto de Pesquisas Econômicas da USP) was used for studies on the labour force. (By agreement with the Ministry of Labour, USP was in charge of processing all of the data relating to the Two-thirds Law.

The PIS - Social Integration Plan (Plano de Integração Social) (Complementary Law No. 7, issued 7.9.70 and Resolution No. 174, issued 25.2.71, Central Bank)

- The PIS was also incorporated into RAIS as from 1976.
- Drawn up in 1970 and regulated in 1971, the PIS was, in theory, a mechanism whereby workers were allowed a share of company profits.
- It is executed by means of a Participation Fund made up of monthly deposits paid to the Federal

Economic Bank - CEF (Caixa Econômica Federal) by various companies. The CEF in turn had to distribute the companies' annual profits to employees according to their respective salary and seniority within the company. In exceptional cases, employees were allowed to withdraw the totality of their shares.

- Companies were obliged to fill out and send several forms to the CEF. These forms included information concerning the company's size and type of economic activity, as well as details of each employee's sex, age and place of birth. It was possible to obtain part of the above-mentioned data by means of an agreement with the CEF. SENAI used to obtain such data for its studies and surveys on the labour market, from the companies' files.

ANNEX D

CLASSIFICATION OF INDUSTRIES

12 METAL PRODUCTS AND MACHINERY

12.10 - Manufacture of non-electric machine motors and transmission equipment for industrial purposes - including spare parts and accessories.

12.20 - Manufacture of machines, appliances and industrial equipment for hydraulic, thermal, ventilation and refrigeration installations, with or without electric motors - including spare parts and accessories.

12.31 - Manufacture of machine-tools, operating machines and industrial equipment, either meshed or not with an electric motor.

12.32 - Manufacture of spare parts, accessories, utensils and tools for industrial machines.

12.40 - Manufacture of machines, appliances and other equipment for use in agriculture, aviculture, rabbit breeding, small animal farming, obtaining products of animal extraction, and for improving and preparing agricultural products - including spare parts and accessories.

12.51 - Manufacture of machines, appliances and equipment for industrial purposes, including lifts.

12.52 - Manufacture of machines, appliances and equipment for arts and crafts.

12.53 - Manufacture of machines, appliances and utensils, both electrical and non-electrical, for office work - electronic equipment excepted (13.70).

12.54 - Manufacture of machines and appliances for domestic use, with or without an electric motor: sewing machines, refrigerators, freezers and similar items, washing machines and dryers.

12.60 - Manufacture of stop-watches and watches, electric and non-electric - including spare parts.

12.70 - Manufacture and assembly of tractors, production of terracing machines and appliances - including spare parts and accessories.

12.80 - Repair and maintenance of machinery, appliances and industrial and agricultural equipment, as well as of terracing machinery.

12.99 - Production of other types of machinery, appliances and equipment which are not classified or specified.

13 ELECTRICAL AND COMMUNICATIONS EQUIPMENT INDUSTRY

13.10 - Manufacture of machines and appliances for the production and distribution of electric energy

13.20 - Manufacture of electrical material - excepting vehicles (13.40).

13.30 - Manufacture of light bulbs.

13.40 - Manufacture of electric material for vehicles

13.51 - Manufacture of electric appliances for domestic and personal use - including spare parts and accessories - excepting those mentioned in 12.54.

13.52 - Manufacture of electric appliances and utensils for industrial and commercial purposes - including spare parts and accessories.

13.53 - Manufacture of appliances and electrical equipment for therapeutic and electrochemical usage, and for other technical usage - including spare parts and accessories.

13.70 - Manufacture of electronic equipment - excepting those cited in 13.80.

13.80 - Manufacture of communications material - including spare parts and accessories.

13.90 - Repair and maintenance of electrical equipment, electronic and communications apparatus and appliances for industrial use.

25 CLOTHING, FOOTWEAR AND TEXTILE INDUSTRY

25.10 - Manufacture of warm and cold weather clothes.

25.20 - Manufacture of hats.

25.30 - Manufacture of shoes.

25.40 - Manufacture of accessories - umbrellas, handerchiefs, ties, belts, purses, etc..

25.99 - Manufacture of other cloth items which were not specifically mentioned or classified - except for spun or woven items (24.99).

The above information was obtained from the following source: CGC (Cadastro Geral de Contribuintes) General Taxpayers' File, Ministry of Finance.

ANNEX E

QUESTIONNAIRES

SENAI-SP/IIEP

Original: Portugues

ANNEX E : QUESTIONNAIRES

Survey on education, vocational training and employment in small firms

Questionnaire no. 1

Head of firm

Card |A|
1

Questionnaire no. |1| | | | | | | |
2

Interviewee :

Enterprise :　　　　Tel.:

Interviewer :　　　　Date :

|10| 1. Sex: |__|1| Male　　|__|2| Female

|11-12| 2. What is your age ? |__|__| years

|13| 3. Civil status ?
- |__|1| married
- |__|2| separated, divorced
- |__|3| widow
- |__|4| single

4. Where were you born ? Where were your parents born ?

|14| A. Interviewee |__| ______________________

|15| B. Father |__| ______________________

|16| C. Mother |__| ______________________

For those born in Sao Paulo, move to Question 7

|17-19| 5. How long have you been living in Sao Paulo or Brazil ?

|__|__|__| months

|20| 6. Why did you come to Sao Paulo or Brazil ?
- |__|1| don't know, don't remember
- |__|2| personal reasons
- |__|3| to find work
- |__|4| to study
- |__|5| to study and find work
- |__|6| other reasons. Specify. ______________________

7. What is your educational level ? And that of your parents ?

|21-22| A. Interviewee: |__|__| ________________________________

|23-24| B. Father : |__|__| ________________________________

|25-26| C. Mother : |__|__| ________________________________

|27| 8. Have you completed any course of vocational training, specialization or upgrading ?

|__|_1_| No

|__|_2_| Yes (Complete Table 8.1.)

|28| 9. Have you started and not completed any training course ?

|__|_1_| No

|__|_2_| Yes (Complete Table 9.1.)

Table B.1 Completed vocational training course (even without the diploma or certificate)

Nº	COURSE	School or organizing entity	Was it related to your present job? (X = yes)	Duration (hours)
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				

SUMMARY:

29-30 A. Total number of courses completed : |_|_|

31 B. Number of SENAI courses completed : |_|

32 C. Number of courses related to present job : |_|

33-36 D. Total number of hours of training : |_|_|_|_|

37-40 E. Training hours in SENAI : |_|_|_|_|

41-44 . F. Training hours related to present job : |_|_|_|_|

Table 9.1 Training courses started but not completed (interrupted or on-going)

Nº	COURSE	Are you following it now ? X = Yes	School or organizing entity	Is it related to present job ? X = Yes	Nº of hours completed so far
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					

Summary:

A. Non-completed courses

46-46 a. Number of courses : |__|__|
47 b. Nº of SENAI courses : |__|__|
48 c. Nº of courses related to present job: |__|
49-52 d. Total nº of hours of training: |__|__|__|__|
53-56 e. Training hours in SENAI : |__|__|__|__|
57-60 f. Training hours related to present job : |__|__|__|__|

B. On-going courses

45-46 a. Number of courses : |__|__|
63 b. Nº of of SENAI courses : |__|__|
64 c. Related to present job : |__|
65-68 d. Total nº hrs. training : |__|__|__|__|
69-72 e. Training hours in SENAI : |__|__|__|__|
73-76 f. Training hrs. related to present job : |__|__|__|__|

10. In which occupation and industrial area did your father spend the most time ?

77-78 A. Occupation/status : |__|__| ______________________________

79-82 B. Industry |__|__|__|__| ______________________________

83-84 11. Did that occupation, or another of your father's occupations, influence or affect in any way your becoming an entrepreneur ?

|__|_1_| No

|__|_2_| Yes. If so in what way ?

|__|_1_| Father was head of a firm in the same industry or related one
|__|_2_| Father was head of a firm in another industry
|__|_3_| Father was working in that industry and knew it well
|__|_4_| Other

Specify : ______________________________

____

85-86 12. What about other relatives' occupations ?

|__|_1_| No
|__|_2_| Yes. If so, in what way ?

|__|_1_| Relative was head of a firm in the same industry or related one
|__|_2_| Relative was head of a firm in another industry
|__|_3_| Relative was working in that industry and knew it well
|__|_4_| Other

Specify : ______________________________

____

87-88 13. How old were you when you started working ?

|__|__| years.

14. In total, how many jobs did you have before becoming a head of a firm ?

89 |__|_1_| Started as head of firm (go on to Question 18)

|__|_2_| Worked before.

90 A. Number of jobs |__|

91-93 B. Duration : |__|__|__| months

2nd Card |B|
1

Form nº |_1|__|__|__|__|__|__|__|
2 9

15. Did this (or any of these) job(s) have an influence on your becoming an entrepreneur ?

[10] |__|_2| No, none of them
|__|_3| Yes. Specify :

[11-12] A. Occupation/status : |__|__| ____________________

[13] B. Employment status : |__|_1| Wage earner, civil servant
|__|_2| Employed in this firm
|__|_3| In this firm, as relative of owner(s)
|__|_4| In other firm, as relative of owner(s)
|__|_5| Self-employed
|__|_6| Other. Specify : ______________

[14-17] C. Industry : |__|__|__|__| ____________________

[18] D. Size of the firm : |__|_1| Only family workers
|__|_2| Micro (1-5 employees)
|__|_3| Small (5-99 employees)
|__|_4| Average (100-499 employees)
|__|_5| Large (500 or more employees)
|__|_6| Irrelevant, was not a firm (State, church, foundation)

[21] E. Time worked |__|__|__| months

F. Influence of this job/activity (mention the most important) :

[22] |__|_1| in acquiring practical knowledge, administrative, managerial skills
|__|_2| in acquiring practical knowledge on commerce, marketing, selling
|__|_3| in acquiring technical knowledge on equipment, machinery, production methods

☐ 4 Alternatives 1, 2 and 3 above combined

☐ 5 in developing professional relations and friendships

☐ 6 in accumulating capital to start up your own business

☐ 7 Other. Specify : ________________________

____

For those who only had one job/activity before becoming head of a firm, move on to Question 18.

16. Your first employment or activity was :

[23] ☐ 1 the one described in Question 15

☐ 2 Another. Describe it :

[24-25] A. Occupation/status |__|__| ________________________

[26] B. Employment status : ☐ 1 Wage earner, civil servant

☐ 2 Employed in this firm

☐ 3 In this firm, as relative of owner(s)

☐ 4 In other firm, as relative of owner(s)

☐ 5 Self-employed

☐ 6 Other. Specify : ______________

[27-30] C. Industry : |__|__|__|__| ________________________

[31] D. Size of firm : ☐ 1 family affair

☐ 2 micro (1-5 employees)

☐ 3 small (5-99 employees)

☐ 4 average (100-499 employees)

☐ 5 large (more than 500 employees)

☐ 6 irrelevant, was not a firm (State, church, foundation)

[32-34] E. Time worked : |__|__|__| months

For those who had only one job/activity before becoming an entrepreneur, move on to Question 18

405

17. In which of these jobs did you spend most time before becoming an entrepreneur/starting up your own business ?

35 |__|_1| The one described in Question 15
|__|_2| The one described in Question 16
|__|_3| Another. Please specify :

36-37 A. Occupation/status: |__|__| ______________________________

B. Employment status: |__|_1| wage earner, civil servant
|__|_2| employed in this firm
|__|_3| in this firm, as relative of owner(s)
|__|_4| in other firm, as relative of owner(s)
|__|_5| self-employed
|__|_6| other. Specify : ______________

39-42 C. Industry : |__|__|__|__| ______________________

43 D. Size of firm : |__|_1| family affair
|__|_2| micro (1-5 employees)
|__|_3| small (5-99 employees)
|__|_4| average (100-499 employees)
|__|_5| large (more than 500 employees)
|__|_6| irrelevant, was not a firm (State, church, foundation)

44-46 E. Time worked : |__|__|__| months

18. How did you start your career as an entrepreneur ?

47 |__|_1| Inheritance, or family business (move on to Question 20)
|__|_2| Created your own firm
|__|_3| Bought the firm when it was just starting
|__|_4| In association with a starting small/medium-sized firm
|__|_5| Bought an already organized and producing firm (medium size)

|__|_6| In association with a large national firm

|__|_7| In association with a large foreign company.

Specify : ______________________________

____

____

____

19. How/where did you get the majority of your capital in order to start as an entrepreneur ?

48 |__|_1| Own or family resources

|__|_2| Sold family property

|__|_3| Borrowed from friends/family

|__|_4| Bank loan

|__|_5| Special credit for small firms

|__|_6| Other source.

Specify : ______________________________

____

20. Did you start the firm alone, or with a/several partner(s) ?

49 |__|_1| Alone (move on to Question 21)

|__|_2| With partner(s)

50 A. How many ? |__|

B. Composition : |__|_1| Only individual persons

|__|_2| Individual persons and legal entities

51 C. Your relationship with your partner(s) was :

|__|_1| Only friendly or family relationships

|__|_2| Family and friendly, but also professional

|__|_3| Only professional

|__|_4| Other.

Specify : ______________________________

____

21. Did you start in this firm, or in another ?

53 |__|_1| In this one (move on to Question 27)

|__|_2| In another.

22. In total, how many firms did you run, and for how long, before starting in this one ?

54 A. Number of firms : |__|

55-57 B. How long : |__|__|__| months

23. Describe your previous experience as an entrepreneur :

58 A. Industry :
|__|_1| same as for present firm
|__|_2| same as present and other
|__|_3| other branch

59 B. Location :
|__|_1| Sao Paulo City
|__|_2| Upstate Sao Paulo
|__|_3| Both upstate Sao Paulo & Sao Paulo City
|__|_4| Other state
|__|_5| Sao Paulo and other state.

60 C. Size :
|__|_1| Small firm only (up to 99 employees)
|__|_2| Medium and large firms only (more than 100 employees)
|__|_3| Both categories.

61 D. Do they still exist ?
|__|_1| neither of them (move on to Q. 24)
|__|_2| one or two
|__|_3| all of them (move on to Item F)

62 E. Why did they stop operating (give the most important reason) ?

|__|_1| bankruptcy, or financial reasons
|__|_2| merger, with other firm(s)
|__|_3| owner's personal reasons
|__|_4| other reasons. Specify : ______________________________

____

63 F. Do you still participate in those which continue to operate ?

|__|_1| No (move on to Q. 24)
|__|_2| Yes.

64 G. In how many ? ☐

65 H. In what way ?

☐ 1 As the only owner
☐ 2 Partner
☐ 3 Consultant, autonomous
☐ 4 Employee
☐ 5 Other

66 I. In which industry do they operate ?

☐ 1 the same as for your present firm
☐ 2 same and another
☐ 3 another

67 J. What is their size ?

☐ 1 small firms only
☐ 2 medium/large firms only
☐ 3 both

68 24. How did you start in this firm ?

☐ 1 Inheritance, or family business
☐ 2 Created your own firm (move on to Question 26)
☐ 3 Bought the firm when it was just starting
☐ 4 In association with a starting small/medium-sized firm
☐ 5 Bought an already organized and producing firm
☐ 6 In association with an already organized and producing firm

Specify :

69 25. How/where did you obtain the majority of the capital to start this firm ?

☐ 1 Own or family resources
☐ 2 Sold family property
☐ 3 Borrowed from friends/family
☐ 4 Bank loan
☐ 5 Special credit for small firms
☐ 6 Other source. Specify :

26. Did you start the firm alone or with a/several partner(s) ?

70 |__|_1| Alone (move on to Question 27)
|__|_2| With partner(s)

71 A. How many ? |__|

72 B. Composition : |__|_1| Only individual persons
|__|_2| Individual persons and legal entities

73 C. Your relationship with your partner(s) was :
|__|_1| Only friendly or family relationships
|__|_2| Family and friendly, but also professional
|__|_3| Only professional
|__|_4| Other. Specify : ______________________________
____
____

74 27. How long have you been in this firm ? |__|__|__|__ months

28. Has your position with relation to that of your partner(s) changed within the firm ?

77 |__|_1| No, same as when started. (If you have no partners move on to Question 30)
|__|_2| Different - I started alone and now have partner(s)
|__|_3| Different - the partners have changed
|__|_4| Different - I started with partners and am now alone (Move on to Question 30).

29. Characteristics of the partnership today :

78 A. Number of partners : |__|

79 B. Composition : |__|_1| Only individual persons
|__|_2| Persons and corporate bodies

80 C. Your relationship with your partner(s) was :
|__|_1| Only friendly or family relationships
|__|_2| Family and friendly, but also professional
|__|_3| Only professional
|__|_4| Other. Specify : ______________________________
____
____

81 D. Are you the main partner ? |__|_1| Yes
|__|_2| No

82-83 E. Your share of the capital is : |__|__| %

84-85 30. How many hours per week on average do you work in this firm ?

|__|__| hours

A. Which activity takes up the most of your time :

86
|__|_1| Administration
|__|_2| Marketing and sales
|__|_3| Administration and marketing
|__|_4| Production
|__|_5| A combination of all four above

87 31. Apart from your activity as an entrepreneur, do you have any other job or professional activity ?

|__|_1| No (Move on to Question 32)
|__|_2| Yes, sometimes (move on to item B)
|__|_3| Yes, regularly

88-89 A. How many hours per week do you spend on this other activity, on average?

|__|__| hours

B. Main activity :

90
|__|_1| Employment in the public sector
|__|_2| Part-time employment
|__|_3| Teaching
|__|_4| Consultancy, advice
|__|_5| Sales representative
|__|_6| Other self-employed activity
|__|_7| Public office, elected or on trust
|__|_8| Other. Specify : ______________________________

____

91 C. Why do you have this other activity ?

|__|_1| for financial reasons
|__|_2| out of professional interest
|__|_3| for both financial reasons and out of professional interest
|__|_4| personal/family reasons
|__|_5| other. Please specify : __________________________

____

411

CARD |_c|
1

Questionnaire nº |1|_|_|_|_|_|_|_|
2 9

32. After having started in this enterprise, did you start up any other firm as partner or owner ?

10 |__|_1| No (Move on to Question 33)
|__|_2| Yes. Specify :

11 A. Number of firms : |__|

12 B. Industry
|__|_1| same as present firm or related
|__|_2| same as present and other
|__|_3| other branch

13 C. Location :
|__|_1| Sao Paulo City
|__|_2| Upstate Sao Paulo
|__|_3| Both upstate SP and SP city
|__|_4| Other state
|__|_5| SP and other state.

14 D. Size :
|__|_1| Small firm only (up to 99 employees)
|__|_2| Medium and large firms only (more than 100 employees)
|__|_3| Both categories

15 E. Do they still exist ?
|__|_1| none of them (move on to Q.33)
|__|_2| one or two
|__|_3| all of them (move on to Item G)

16 F. Why did they stop operating (give the most important reason) ?
|__|_1| bankruptcy, or financial reasons
|__|_2| merger with other firm(s)
|__|_3| other reasons. Specify : ______________________________

____

____

17 G. Do you still participate in those which continue to operate ?
|__|_1| No (move on to Q. 34)
|__|_2| Yes

18 H. In how many ? |__|

19 I. In what way ?
|__|_1| As the only owner
|__|_2| Partner
|__|_3| Consultant, autonomous
|__|_4| Employee
|__|_5| Other

[20] J. In which industry do they operate?

|__|_1| the same as your present firm
|__|_2| the same and other
|__|_3| other

[21] K. What is their size ? |__|_1| small firms only
|__|_2| medium/large firms only
|__|_3| both

33. Did you, at any time, have to interrupt your career as an entrepreneur and look for employment in another firm or work for another person ?

[22] |__|_1| No (move on to Q. 34)
|__|_2| Yes

[23] A. Why ? |__|_1| financial necessity
|__|_2| professional interest
|__|_3| financial and professional reasons
|__|_4| personal reasons
|__|_5| other. Specify : ______________________________

____

[24-25] B. Length of time worked : |__|__| months

[26-27] C. Main occupation or activity carried out : |__|__|

____

[28-31] D. Industry : |__|__|__|__| ______________________________

34. Have you already thought of your succession in this firm or in any other in which you participate ? What are your plans in this respect?

[32] |__|_1| I have never thought about it (move on to Q. 36)
|__|_2| Have thought about it, but made no plans yet (move on to Q. 36)
|__|_3| I intend to sell the firm, or my share in it (move on to Q. 36)
|__|_4| I expect my son(s) to take over
|__|_5| I expect another family member to take over
|__|_6| I expect a friend to take over.

Specify : ____

____

____

____

35. How would you like your successor to be trained/prepared for his future responsabilities as entrepreneur ?

33

|__|_1| Don't know
|__|_2| Through previous practical experience in the firm
|__|_3| Through training courses
|__|_4| Through courses and practice
|__|_5| Other.

Specify for alternatives 2 and 5 : ______________________
____

36. Do you feel that you yourself are insufficiently prepared for certain aspects of your work ?

34

|__|_1| Yes (move on to Q. 37)
|__|_2| No, with regard to technical aspects (production process, raw materials, product ...)
|__|_3| No, as regards financial or managerial aspects
|__|_4| No, as regards marketing and sales
|__|_5| No, as regards general culture and information
|__|_6| No, with regard to a combination of the above-mentioned aspects
|__|_7| No, for other reasons.

Specify for alternatives 2 and 7 : ______________________
____
____

A. In what ways do you feel you could overcome this lack of preparation ?

____
____
____

37. Is there any other problem which affects your job as entrepreneur ?

35

|__|_1| No (Move on to Q. 38)
|__|_2| Yes - lack of capital, credit, finance
|__|_3| Yes - bureaucracy problems
|__|_4| Yes - tax problems, social insurance contributions
|__|_5| Yes - problems related to the cost or unavailability of manpower
|__|_6| Yes - related to cost or unavailability of raw materials
|__|_7| Yes - high level of competition
|__|_8| Yes - the economic crisis, recession
|__|_9| Yes. Other.

Specify for alternatives 2 and 9 : ______________________
____

A. How do you think you could overcome these problems ?

38. Have you already used the services of some of the financial aid or consultancy services which were created to assist small firms ? Have you even heard about them ?

36 |__|_1| No, never heard about such services
|__|_2| Heard of them, but never used them
|__|_3| Planned to use them but have not yet done so
|__|_4| I contacted them, but received no reply
|__|_5| Contacted them, was attended, but not very satisfied
|__|_6| Contacted them and was satisfied with their services

Specify :

39. Do you know of SENAI ?

37 |__|_1| No, never heard of it
|__|_2| Have heard of it, but never used its services
|__|_3| Planned to use it, but have not yet done so
|__|_4| Have contacted them, but received no reply
|__|_5| Contacted them, was attended but not very satisfied
|__|_6| Contacted them and was satisfied with their services

Specify :

38-39 40. Where do you live ? District : |__|__|

40 A. This district is : |__|_1| the same as that of the firm
|__|_2| close to it
|__|_3| far from it
|__|_4| in another municipality, but close
|__|_5| in other municipality, far from the firm

41-42 41. In which income bracket do you fit (see attached table)?

|__|__|

SENAI-SP/IIEP　　　　　　　　Original : Portuguese

Questionnaire no. 2　　　　Card |A|
1

The firm　　　　Questionnaire no. |2| | | | | | |
2

Interviewee :	Position :
Firm :	Tel. :
Interviewer :	Date :

A. HISTORY AND ACTUAL CHARACTERISTICS OF THE FIRM

10-11 *1. Year of foundation : |__|__|

A - Has it been operating continuously since its foundation ?

12
|__|1| Yes (move on to question 2)
|__|2| No : it suffered interruptions or periods of inactivity

13 B - How many ? |__|

14 15 C - For how long, in all ? |__|__| months

16 D - Reasons :
|__|1| Financial (economic) reasons
|__|2| Personal reasons of the firm's head
|__|3| Other. Please specify ______________________
____

17 *2. Legal status of the firm :
|__|1| Individual ownership
|__|2| Private limited company/limited liability company
|__|3| Public limited company
|__|4| Other. Please specify ______________________
____

18 A - Has there been a change of legal status ?

|__|1| No (Move on to question 3. If individual ownership, move on to question 4)

|__|2| Yes

19 B - How many times ? |__|

20 C. What was its initial legal status . |__| (code as in 2)

3. Specify the actual participation in the firm of the owner(s) or associate(s). (If only one, move on to item E)

21 A - How is capital divided between partners/associates ?

- ☐ 1 In equal parts
- ☐ 2 Unequally - main share belongs to (a) partner(s) who work(s) in the firm
- ☐ 3 Unequally - main share belongs to (a) partner(s) who do(es) not work in the firm
- ☐ 4 Unequally, main share belongs to a corporate body which makes the decisions in the firm.

22 B - Who makes the decisions in the firm ?

- ☐ 1 Partner(s) who work in it
- ☐ 2 Other partner(s) - person(s)
- ☐ 3 Other parnter - corporate body/entity)
- ☐ 4 All participate equally in the decision-making process.

23 C - How many partners actually work in the firm ?

- ☐ 1 None (move on to question 4)
- ☐ 2 Hardly any (idem)
- ☐ 3 Two or more, but not all
- ☐ 4 All

24 D - Is the work divided between partners ?

- ☐ 1 No, they all deal with everything
- ☐ 2 Yes

Please explain (for either alternative) ______________________________

____

25 E - Is(are) the owner(s) directly involved in the production activities ?

- ☐ 1 No (move on to question 4)
- ☐ 2 Yes, sometimes
- ☐ 3 Yes, regularly

26 F - What do(es) they(he/she) do ?

- ☐ 1 Planning and general coordination of the production
- ☐ 2 Supervise the productive activities
- ☐ 3 Participate him/herself in production activities
- ☐ 4 Plan and supervise
- ☐ 5 Plan, supervise and participate directly in production activities.

Please specify (for any alternative) ______________________________

____

4. Is this establishment unique or does it have branches or subsidiaries

27 ☐ 1 Only one establishment
☐ 2 Head or main office.

A. Has it always been the case ?

28 ☐ 1 Yes
☐ 2 No, it used to be only one establishment and now it has branches/subsidiaries
☐ 3 No, it used to have branches, but is now on its own
☐ 4 No, it used to be a branch office, but is now the main office

> In the case of only one establishment, move on to Q. 6

5. Characteristics of the branches

29 A. Number : ☐

30 B. Activities :
☐ 1 Industrial
☐ 2 Commercial/services
☐ 3 Both industrial and commercial

31 C. Location :
☐ 1 City of São Paulo/Greater Sao Paulo
☐ 2 Upstate São Paulo
☐ 3 City and upstate São Paulo
☐ 4 São Paulo and other States. Which ? ____________
☐ 5 Other State(s) only. Which ? ____________

32-33 6. Actual location : ☐☐ District : ____________

34 A. Did you change your location ?
☐ 1 No (Move on to Q.7)
☐ 2 Yes

35 B. How many times did you move ?
☐

36 C. Why did you move ?
☐ 1 Firm's own decision to expand or improve working conditions
☐ 2 Decision imposed on firm due to outside/external conditions
☐ 3 Both 1 and 2 above
☐ 4 Other reason.
Specify : ____________

37 D. Where was the firm's initial location ? ____________________

|__|_1| Other district, same zone
|__|_2| Other zone within SP City
|__|_3| Other municipality within Greater SP
|__|_4| Other municipality in SP State
|__|_5| Other State.

38 7. Who owns the facilities where the firm operates ?

|__|_1| The firm, or its owner (inherited or purchased)
|__|_2| The firm - still paying for them
|__|_3| Rented
|__|_4| On loan
|__|_5| Other. Specify : ____________________

39 A. Has there been any change in this respect ?

|__|_1| No (move on to Q8)
|__|_2| Yes

40 B. What was the previous situation ? |__| (Code as for Q7)

41 C. Why did you change ?

|__|_1| Firm's decision to expand and/or to improve production activities
|__|_2| Necessity/imposed from outside, or by external conditions
|__|_3| Both 1 and 2
|__|_4| Other reason

Specify ____________________
____
____

42-47 8. What is its constructed surface ? |__|__|__|__|__|__| sq.m.

A. Has its initial area been reduced or expanded ?

48
|__|_1| Neither (Move on to Q9)
|__|_2| Expanded. Initial surface area : .... sq. m.
|__|_3| Reduced. Initial surface area : .... sq. m.

49-51 Percentage of change : |__|__|__| %

B. Why did it change ?

52
|__|_1| Firm's own decision to expand, to improve production conditions
|__|_2| Imposed by external factors
|__|_3| Both 1 and 2 combined
|__|_4| Other reasons

Specify : ____________________
____

53-58 9. What is the firm's registered capital ? Cru. |__|__|__|__|__|__| (thousand)

A. Has there been a new issue of capital (increase in real terms) ?

59
|__|_1| No (move on to Q.10)
|__|_2| Yes, once
|__|_3| Yes, twice
|__|_4| Yes, three times or more.

60 B. With what resources ?
|__|_1| Own
|__|_2| Loan from family/friends
|__|_3| Bank loan
|__|_4| Special credit for small & medium-size firms.
Which ? ______________________________
|__|_5| Association with a new partner (person)
|__|_6| Association with another small or medium-size firm
|__|_7| Association with a large firm
|__|_8| Other. Specify ______________________________________

61-64 10. What was the firm's turnover in the last fiscal year ?
Cru |__|__|__|__| (million)

A. In real terms, it was :

65
|__|_1| Practically equal to that of 1981 (move on to Q.11)
|__|_2| Larger, by ....% approximately
|__|_3| Smaller, by ......% approximately

66-67 Percentage of change : |__|__| %

11. What was the firm's value added in the last fiscal year ?
(turnover less raw materials and other inputs)

68-71 Cru |__|__|__|__| (million)

12. What fraction of the installed capacity was the firm operating on in 1982 ?

72-74 |__|__|__| %

75-77 A. And for the first half of 1983 ? |__|__|__| %

78 B. In the last two years (81/82), the degree of use of the productive capacity -
|__|_1| stable (move on to Q. 13)
|__|_2| on the increase
|__|__| on the decrease
|__|_4| unstable - no definite tendency. Specify for 2 and 4) ______
____

79 13. On how many shifts did you operate on average in 1982 ? |__|

80 A. And in the first six months of 1983 ? |__|

14. What was the tendency in 1981/82 regarding :

1 = stable
2 = on the increase
3 = on the decrease
4 = unstable
5 = not used

81 |__| Permanent labour

82 |__| Temporary labour

83 |__| Production

84 |__| Sales

Specify : ____

____

____

15. What are your plans for 1983/84 in terms of : (code as for Q.14)

85 |__| Permanent labour

86 |__| Temporary labour

87 |__| Production

88 |__| Sales

Specify : ____

____

____

Card |B|
1

Questionnaire nº |2| | | | | | | |
2 9

B. PRODUCTS AND PRODUCTION PROCESS

16. What does your firm produce or do ? What is the share of each product in the firm's turnover ?

	Description	Share in turnover
Main product(s)		
Other		

|10| A. How many items in total do you produce/How many different activities do you have ?
|__|

|11| B. How many products guarantee half of your turnover ? |__|
Specify : ____________________
____

|12| C. Do you produce essentially :
|__|1| Final products
|__|2| Intermediate products - components, spare parts for other industries
|__|3| Offer services such as assembly line or finishing services
|__|4| Several of the above.
Specify: ____________________

|13| D. Are your products essentially :
|__|1| Cheap non-durable consumer goods for low income groups
|__|2| Luxury non-durable consumer goods
|__|3| Consumer durable goods for low income groups
|__|4| Sophisticated, luxury consumer durable goods
|__|5| Intermediate goods (input, raw materials)
|__|6| Capital goods (machinery, equipment)

[14] 17. Are these products/activities the same as when the firm started operating ?

|__|1| Yes (Move on to Q. 18)

|__|2| No, they have been partly changed

|__|3| No, they have changed completely

Specify (for 2 and 3) : ____________________

[15] A. Why did you change (main reasons)

|__|1| Cost, financial reasons

|__|2| Change in the market / in consumer preferences

|__|3| Technical reasons (equipment, raw materials)

|__|4| On the request of a/several client(s)

|__|5| 1, 2 or 3 above combined

|__|6| 4 combined with one or two of the above reasons

|__|7| Other reason(s)

Specify : ____________________

[16] 18. Who conceived/designed the original project/product ?

|__|1| The firm bought a product licence. (Explain and move on to Q. 19)

|__|2| The product designs were furnished by a client firm (Idem)

|__|3| The products were conceived and developed by the firm itself

|__|4| Copying or adapting of imported products

|__|5| Copying or adapting products produced in Brazil

|__|6| Various of the above

|__|7| Other

Specify : ____________________

[17] A. Who in the firm has been mainly responsible for the design and development or copying/adapting of these products/projects ?

|__|1| Employee - skilled worker

|__|2| Employee - technician/engineer

|__|3| Other category of employee

|__|4| Former owner/partner

|__|5| Actual owner/partner

|__|6| Somebody outside the firm

|__|7| Other. Specify : ____________________

19. Do you modify and keep your products up-to-date ?

18 |__|_1| Never (move on to Q.20)
|__|_2| We have done so once
|__|_3| Sometimes
|__|_4| Regularly
Specify : ____________________
____
____

A. Why do you modify/ keep your products up-to-date ?

19 |__|_1| For financial/cost reasons
|__|_2| Change in the market, consumer profiles or tastes
|__|_3| Technical reasons (equipment, materials)
|__|_4| At the request of a(several) client(s)
|__|_5| Reasons 1, 2 or 3 above combined
|__|_6| Reason 4, combined with one or two of the above
|__|_7| Other reason(s)
Specify : ____________________
____
____

B. Who makes the modifications ?

20 |__|_1| Employee - skilled worker
|__|_2| Employee - technician/engineer
|__|_3| Other category of employee
|__|_4| Former owner/partner
|__|_5| Actual owner/partner
|__|_6| Somebody outside the firm
|__|_7| Other. Specify : ____________________
____
____

20. Have you paid royalties during the last two years ?

21 |__|_1| No
|__|_2| Yes. Specify : ____________________
____

A. Are you going to pay some in 1983 or 1984 ?

22 |__|_1| No
|__|_2| Yes. Specify : ____________________

21. Does the firm carry out all stages of the manufacturing ?

23 |__|_1| Yes (Move on to item C)
|__|_2| Not all, but most of them
|__|_3| Not all but close to half
|__|_4| Not all, only a minor part

A. What stages of the manufacturing are done outside the firm ?

B. Who carries out these stages ?

24 |__|_1| Another branch of the firm
|__|_2| Outside workers, home workers
|__|_3| Other small and medium-size firms
|__|_4| Large firms
|__|_5| Several of the above. Specify : ____________________

C. Has it always been the case since the firm started ?

25 |__|_1| Yes
|__|_2| No. Specify : ____________________

22. Does the firm work "to order" ?

26 |__|_1| No
|__|_2| Yes, exclusively
|__|_3| Yes, for the main part of the production
|__|_4| Yes, for nearly half the production
|__|_5| Yes, for a small part of the production

27 A. Has this always been the case since the firm started ?

|__|1| Yes

|__|2| No Specify : ____________________

____

23. How do you plan or control your level of production ?

28
|__|1| According to the clients' requests
|__|2| According to sales
|__|3| Both 1 and 2
|__|4| Have a system of planning/control
|__|5| Other method

Specify : ____________________

____

A. Do you use a computer to plan your activities ?

29
|__|1| No
|__|2| Yes, sometimes one outside
|__|3| Yes, I use one outside regularly
|__|4| Yes, the firm has its own computer

B. For what length of time is your production planned ?

30
|__|1| 1-2 months in advance
|__|2| 3-6 months in advance
|__|3| 7 months to a year
|__|4| more than a year
|__|5| it depends - no fixed periods

24. Are you involved in small-batch or large-batch production ?

31
|__|1| No, only unit - custom-made - production
|__|2| Yes, small-batch production
|__|3| Yes, large-batch production
|__|4| Mixed

Specify : ____________________

____

32 A. Has this always been the case ?

|__|1| Yes

|__|2| No. Specify : ____________________.

____

25. Do you have an assembly line ?

33

☐ 1 No

☐ 2 Yes, but not a fixed one - it depends on the project or product

☐ 3 Yes

Specify : ______________________________

____

26. Is your manufacturing process essentially

34

☐ 1 Manual ?

☐ 2 Electro-mechanical - with manual control ?

☐ 3 Electro-mechanical - with electronic control ?

☐ 4 Mixed ?

Specify : ______________________________

____

A. Has this always been the case ?

35

☐ 1 **Yes**

☐ 2 **No. Explain :** ______________________________

____

27. Describe the machinery and equipment available in the firm.

____

____

____

____

A. Where were your machines and other equipment produced ?

36

☐ 1 All nationally

☐ 2 Nationally for the most part

☐ 3 All abroad, but bought within the country

☐ 4 Abroad for the most part, but bought in the country

☐ 5 All abroad and imported by the firm

☐ 6 Abroad for the main part and imported by the firm

☐ 7 Both nationally and abroad.

B. Do you have electronically controlled machinery/equipment ?

37

☐ 1 No

☐ 2 Yes, some

☐ 3 Yes, several

Specify (2 and 3) : ______________________________

____

C. Do still have the same equipment and machinery as when the firm started ?

38 |__|_1| Yes, nothing has changed (move on to item E)
|__|_2| For the main part the same
|__|_3| More than half has been changed
|__|_4| Completely changed.
Specify : ______________________________

D. If you have changed, did you :

39 |__|_1| Replace old machinery/equipment ?
|__|_2| Increase the amount of machinery/equipment ?
|__|_3| Both replace and increase the machinery/equipment
|__|_4| Other
Specify: ______________________________

E. Do you have problems usually with your machinery/equipment ?

40 |__|_1| No (move on to Q.28)
|__|_2| Yes, sometimes
|__|_3| Yes, frequently.

F. What type of problem (most important or most frequent) ?

41 |__|_1| It requires constant maintenance/repairs
|__|_2| Lack of spare parts
|__|_3| Problems 1 and 2
|__|_4| Does not allow us to produce the desired quality level
|__|_5| Does not allow us to attain desired level of productivity
|__|_6| Problems 4 and 5
|__|_7| Combination of problems 1 and 2, and 4 and 5
|__|_8| Other
Specify : ______________________________

28. What type of raw materials do you use ?

____
____
____
____

A. Does the firm buy its own raw materials or are they furnished by the client(s) ?

42 |__|_1| Entirely furnished by the client (move on to item E)
|__|_2| Furnished by the client for the main part
|__|_3| Entirely bought by the firm
|__|_4| The main part bought by the firm
|__|_5| Half bought, half furnished.

B. Where do you buy the raw materials ?

43 |__|_1| Domestic market
|__|_2| Mostly on domestic market
|__|_3| All imported
|__|_4| Mostly imported
|__|_5| Half imported, half bought on home market

C. From whom do you buy most of your raw materials ?

44 |__|_1| National small and medium-size firms
|__|_2| Foreign small and medium-size firms
|__|_3| Large national firms
|__|_4| Multinationals
|__|_5| State firms
|__|_6| Through intermediaries - importers, sales representatives
|__|_7| Other(s)

Specify : ____

____

D. How do you generally pay for your raw materials ?

45 |__|_1| All on delivery
|__|_2| Main part on delivery
|__|_3| Totally on credit. Maximum of ..... days
|__|_4| Main part on credit. Maximum of ..... days
|__|_5| Half on delivery half on credit. Maximum of ..... days

E. Do you usually have problems with your raw materials ?

46 |__|_1| No (move on to Q. 29)
|__|_2| Yes, sometimes
|__|_3| Yes, regularly

F. What kind of problem do you most frequently have to face ?

47
|__|_1| Quality
|__|_2| Specifications
|__|_3| Quality and specifications
|__|_4| Costs, price increase
|__|_5| Scarcity, seasonal
|__|_6| Costs and scarcity
|__|_7| Delivery delays
|__|_8| Several or all of the above problems
|__|_9| Other

Specify : ______________________________
____

MARKET AND SALES

29. What is the firm's sales system ?

48
|__|_1| Only retail
|__|_2| Mainly retail
|__|_3| Only wholesale
|__|_4| Mainly wholesale
|__|_5| Half wholesale half retail

A. What is it's system of payment ?

49
|__|_1| Only cash on delivery
|__|_2| Mainly cash on delivery
|__|_3| Only credit. Maximum of ..... days
|__|_4| Mainly credit. Maximum of ..... days
|__|_5| Half cash on delivery, half credit. Maximum of ..... days

30. Who are the firm's main customers - those vital for the firm's survival ?

50
|__|_1| Individual consumers
|__|_2| Small or medium retailers (shops, boutiques)
|__|_3| Large retailers (wholesalers, supermarkets, large stores)
|__|_4| Small and medium size firms
|__|_5| Large firms, multinationals
|__|_6| Small and medium size commercial or service firms (offices, technical assistance)
|__|_7| Large commercial or service firms
|__|_8| Other(s)
|__|_9| No main customer - clientèle varied (Move on to Q. 31)

Specify : ______________________________
____

A. Apart from those mentioned above, what other type of customer forms part of your clientèle ?

|__|1| No other types

51-52 |__|2| Other types : |__| ______________________________
(Code as for Q.30)

31. Does your firm export, or has it exported in the past ?

53 |__|1| No, never (Move on to Q. 32)
|__|2| Used to export, but no longer does so (Idem)
|__|3| Sometimes exports, sporadically
|__|4| Exports regularly

54 A. Where do you export to ? |__|
Country(ies) : ______________________________
____

B. Are you making or have you made use of fiscal incentives for exports ?

55 |__|1| No
|__|2| Yes, sometimes
|__|3| Yes, whenever the firms exports or has exported
Specify : ______________________________
____

C. What proportion of your sales is exported ?

56 |__|1| All (move on to Q. 33)
|__|2| Main part
|__|3| Same as amount sold on domestic market
|__|4| Only a small part

32. Within Brazil, what proportion of your sales is concentrated within the State of São Paulo ?

57 |__|1| All (move on to Q. 33)
|__|2| Main part
|__|3| Same amount as sold to other state(s)
|__|4| Only a small part
|__|5| None, virtually sell only to other state(s).

A. To which states do you sell ?

58 |__|1| Mainly North (RD, AC, AM, RO, PA, AP)

|__|2| Mainly North-East (MA, PI, CE, RN, PB, PE, AL, FN, SE, BA)

|__|3| Mainly South-East (MG, ES, RJ)

|__|4| Mainly South (PR, SC, RS)

|__|5| Mainly Central-West (MS, MT, GO, DF)

|__|6| Sell to various or all regions of the country

33. What level of competition does the firm face ?

59 |__|1| Has no competitors, no similar product on the market (Move on to Q. 34)

|__|2| Weak competion - does not affect firm or worry it

|__|3| Moderate - merits attention, but does not really threaten the firm ; gets on well with other competitors on the market

|__|4| Strong competition - causes concern for the firm, menacing; the firm has to constantly fight to stay on the market.

Explain : ____________________

____

A. Who are your main competitors (most aggressive and/or those which need most attention by the firm) ?

60 |__|1| Clandestine manufacturers

|__|2| Small firms, working in similar conditions

|__|3| Medium-size firms

|__|4| Large national firms

|__|5| Multinationals

|__|6| Others. Whom ? ____________________

|__|7| Have no main competitor: competition is varied (Move on to Item C)

B. Apart from those mentioned above, what other type of competition does the firm face ?

61-62 |__|1| None

|__|2| Some. Type :. |_| ____________________ (Code as for A)

C. Indicate the main strategies or methods used to face/overcome competition (X = yes)

63 |__| Advertising, publicity, marketing

64 |__| Low prices

65 |__| Quality of product

66 |__| Updating product

67 |__| Launching new products

68 |__| Payment facilities

69 |__| Quick service

70 |__| Sophistication, exclusivity of product

71 |__| Other

Specify ______________________________

____

____

D. HUMAN RESOURCES AND PERSONNEL POLICY

34. How many persons work in the firm ? (This one and other branches)

72-73 |__|__| Only in this branch

74-76 |__|__|__| Other branches

A. How many employees did the firm have when it started ?

77
|__|1| Same as today (Move on to Item C)
|__|2| None, only owner(s) (Idem)
|__|3| Less than today : .... employees (Idem)
|__|4| More than today : .... employees

78-81 Variation percentage : |__|__|__|__| %

B. Why did the firm reduce its personnel ? (Main reason)

82
|__|1| Crisis, decrease in production/sales
|__|2| Change of product and/or activity
|__|3| Change of production methods
|__|4| Change/modernization of machinery
|__|5| Reasons 1, 2, 3 or 4 combined
|__|6| Reasons 2,3, or 4 combined
|__|7| Other reason(s)

Specify : ______________________________

____

C. What was the maximum number of employees the firm has had ? When ?

83
|__|1| Present number (Move on to Item E)
|__|2| Initial number, mentioned above (Move on to Item E)

84-86 |__|3| Other : a) |__|__|__| employees

87-88 b) |__|__| the last year that this number was registere

D. Why was the personnel reduced ? (Main reason)

89 |__| ______________________________ (Code as for B)

E. How many persons were employed in December 1982 ?

90 |__|_1| Same amount as today (Move on to Q. 35)
|__|_2| More than today : ...... employees
|__|_3| Less than today : ...... employees

91-93 Percentage of variation : |__|__|__| %

F. Why was the personnel reduced/increased since then ? (Main reason)

94 Reduced : |__| ______________________________ (Code as for B)

Increased: |__|_1| Rise in production and sales
|__|_2| Introduction of new product(s)
|__|_3| Reasons 1 and 2 together
|__|_4| Merged/went into partnership with another firm
|__|_5| Other reason . Which ? ____________________

____

Card |C| 1

Form nº |2|_|_|_|_|_|_|_| 2 9

G. Data from last SENAI survey

10-11 a) Year : |__|__|
12-13 b) Employees : |__|__|
14-15 c) Skilled workers : |__|__|

35. Are there any of the owner's relatives working in the firm ?

16-17 |__|_1| No
|__|_2| Yes. How many ? |__|
Specify relationship and post occupied : ____________________

____

____

36. Does the firm use home workers ?

18 |__|_1| Never (Move on to Q. 37)
|__|_2| Rarely, and not at the moment (Idem)
|__|_3| Always, but not at the moment
|__|_4| Rarely, but using at present time
|__|_5| Always, using at present time

19-20 A. How many is it using, or does it generally use ? |__|__|

B. For which tasks are home workers generally used ? What type of labour ? (sex, age, qualification) : ____________________

____

____

____

C. How does the firm generally recruit these people ?

21 37. |__|_1_| Through friends/acquaintances

|__|_2_| Through its own employees

|__|_3_| Through adverts at the firm's gate

|__|_4_| Through newspaper and radio advertising

|__|_5_| Other ways. Which ? ____________________

37. Does the firm use/contract third persons (or outside firms) to undertake any of the services mentioned below ?

22 |__| Accounting

23 |__| Legal aid

24 |__| Advertising, marketing, research

25 |__| Technical assistance, maintenance of machines and equipment

26 |__| General maintenance of building

27 |__| Production, assembly, finishing of product or parts

28 |__| Medical assistance for employees

29 |__| Canteen services for employees

30 |__| Sales representation

31 |__| Transportation

32 |__| Other(s). Which ? ____________________

1 = usually
2 = sometimes
3 = never

38. How does the firm generally recruit its manpower ?

33 |__|_1_| Through owner's relations or friend(s)

|__|_2_| Through persons already working in the firm

|__|_3_| Through adverts of vacancies at the firm gate

|__|_4_| Through adverts in newspapers, on the radio, or in magazines

|__|_5_| Through employment agencies

|__|_6_| Other method. Which ? ____________________

|__|_7_| Have not recruited for past two years (Move on to Q.41)

39. Within the past two years, has the firm recruited specialized or skilled workers for production purposes ?

34 |__|1| No (Move on to Q. 40)
|__|2| Yes. For which occupations ? ____________________
____

A. How does the firm generally recruit such workers ?

35 |__|1| Within the firm, by promoting or transferring personnel from other occupations (Move on to Item D)
|__|2| Outside the firm

B. Through whom ?

36 |__| ______________________________ (Code as for Q. 38)

C. Are there/have there been difficulties for recruiting this type of worker ?

37 |__|1| No
|__|2| Yes, some
|__|3| Yes, a lot

Explain : ______________________________________
____

D. Who selects or selected these workers ?

38 |__|1| The owner(s) personally
|__|2| Head of Personnel or equivalent
|__|3| Person responsible for the activity concerned
|__|4| Not always the same person - sometimes the owner, sometimes another person
|__|5| Other person. Who ? ____________________

E. How are/were they selected ?

39 |__|1| By means of a practical test
|__|2| By interview, analysis of references
|__|3| By interview and practical test
|__|4| By interview, practical achievement and personality tests
|__|5| Other method(s). Which one ? ____________________
|__|6| With no special method. Explain : ____________________
____

F. Indicate the level of importance of the criteria mentioned below in the selection of specialized/skilled workers.

1 = not important
2 = quite important
3 = very important

40 ☐ Previous experience

41 ☐ Knowledge of the person personal references

42 ☐ Education level* ______

43 ☐ Vocational training* ______

44 ☐ Sex* ______

45 ☐ Age* ______

46 ☐ Civil status* ______

47 ☐ Other(s)* ______

* Specify whenever 2 or 3 are given as replies.

40. Within the last two years, has the firm recruited personnel for technical or professional posts ?

48 ☐ 1 No (Move on to Q. 41)

☐ 2 Yes. Specify which jobs : ______

A. How are these technicians/professionals recruited ?

49 ☐ 1 Within the firm, through promotion and transfer from other occupations (Move on to Item D)

☐ 2 Outside the firm

50 B. Through what or whom ?

☐ ______ (Code as for 38)

C. Are there/have there been difficulties in recruiting these professionals ?

51 ☐ 1 No

☐ 2 Yes, some

☐ 3 Yes, a lot

Explain (alternatives 2 and 3) : ______

D. Who selects/has selected these professionals ?

52 |__| ________________________________ (Code as for 39-D)

E. How are/were they selected ?

53 |__| ________________________________ (Code as for 39-E)

F. Indicate the level of importance of the criteria mentioned below for the selection of such persons :

1 = not important
2 = quite important
3 = very important

54 |__| Previous job experience
55 |__| Knowledge of person, personal references
56 |__| Education level* ________________________________
57 |__| Vocational training* ________________________________
58 |__| Sex* ________________________________
59 |__| Age* ________________________________
60 |__| Civil status* ________________________________
61 |__| Other(s)* ________________________________

* Specify whenever 2 or 3 are given as answers.

41. Does the firm encounter difficulties in trying to keep personnel involved in production ?

62
|__|_1_| No (Move on to Q. 42)
|__|_2_| Yes, some
|__|_3_| Yes a lot

A. Which level of personnel is it the most difficult to maintain ?

63
|__|_1_| Unskilled workers
|__|_2_| Skilled workers
|__|_3_| Technical, medium or high-level personnel
|__|_4_| Several of the above or all

Specify : ________________________________
____

42. Does the firm generally train its personnel involved in production ?

64
|__|_1_| No, never (Move on to question 43)
|__|_2_| Yes, have trained them, but have not done so for past 2 years
|__|_3_| Yes, sometimes - have trained within past two years
|__|_4_| Yes, trains regularly.

A. Who administers/administered this training ?

65
|__|1| Person/institution outside the firm (Move on to item C)
|__|2| Person within the firm (Answer B and move on to D)
|__|3| Both

B. On behalf of the firm, who administers/administered the training ?

66
|__|1| The owner(s)
|__|2| A more experienced employee in the same occupation
|__|3| Other employee. Who ? ____________________
|__|4| Other person. Who ? ____________________
|__|5| Various people. Explain: ____________________
____

C. Outside the firm, who does/did this training ?

67
|__|1| SENAI
|__|2| Other person/institution. Whom ? ____________________
|__|3| SENAI & other. Whom . ____________________

D. What does this training consist of ?

68
|__|1| Practical demonstration, on-the-job
|__|2| Classroom teaching, theoretical training
|__|3| Both

E. Where was/is this training done ?

69
|__|1| Within the firm
|__|2| Outside the firm
|__|3| Both within and outside the firm

F. How long does this training generally last ?

70
|__|1| Less than one week
|__|2| Between one week and one month
|__|3| From 1 to 3 months
|__|4| More than 3 months
|__|5| Varied : ____________________

43. Does the firm employ, or has it employed, SENAI apprentices ?

[71-72] |__|1| No, never

|__|2| Has employed. Explain (course/job and reasons for not employing now).

____

____

|__|3| Currently employs : A. Number : |__|

B. Course/job : ______________________

____

44. Do you know of, or has the firm already benefited from the dispositions laid down by Law 6297/75, giving incentives for vocational training ?

[73] |__|1| Do not know of them, never heard of them (Move on to Q. 45)

|__|2| Have heard of them, but never used (Idem)

|__|3| Have already benefited from them

|__|4| Are using them, or about to do so.

[74] A. For what ? |__|1| To employ SENAI apprentices

|__|2| To promote courses or training

|__|3| For both

[75] B. With the aid of whom ? |__|1| SENAI

|__|2| Another institution. Which ? ______

____

|__|3| On your own

45. Kindly list in the following table the number of persons involved in production, both directly and as support staff (maintenance, quality control, planning, etc.), and specify the content of such occupations.

Characteristics of staff involved in production - both directly and as support staff

Occupation/post	Number		Occupation/post	Number	
	Total	Women		Total	Women

SUMMARY : Total

76-77 A. Unskilled workers |__|__|
78-79 B. Semi-skilled workers |__|__|
80 C. First-line supervisors |__|
81-82 D. Skilled workers |__|__|
83 E. Foremen |__|
84 F. Technicians |__|
85 G. Engineers, high level staff |__|

Women

86-87 A. Unskilled workers |__|__|
88-89 B. Semi-skilled workers |__|__|
90 C. First-line supervisors |__|
91-92 D. Skilled workers |__|__|
93 E. Forewomen |__|
94 F. Technicians |__|
95 G. Engineers, high level staff |__|

SENAI-SP/IIEP

Original: Portuguese

Questionnaire no. 3

Card |A|
1

|3| | | | | | | | |
2 9

Employee

Level | |
10

Interviewee : ______________________ Tel.: __________

Firm : ______________________________________

Interviewer : ______________________ Date : __________

[11] 1. Sex : |__|_1| Male |__|_2| Female

[12-13] 2. Age : |__|__| years

3. Place of birth

[14] A. Of interviewee : |__| ______________________

[15] B. Of father : |__| ______________________

4. Job and activity sector in which father worked longest

[16-17] A. Occupational status |__|__| ______________________

[18-19] B. Industrial group |__|__| ______________________

5. Level of education

[20-21] A. Of interviewee : |__|__| ______________________

[22-23] B. Of his father |__|__| ______________________

[24] 6. Have you undergone any kind of specialized training or vocational training ?

|__|_1| No

|__|_2| Yes (Complete table 6.1)

[25] 7. Have you started, but not finished, or interrupted, any vocational training course ?

|__|_1| No

|__|_2| Yes (Complete table 7.1)

Table 6.1 Completed vocational training courses (even without diploma or certificate)

Nº	Type of course	Name of school or institution which organized course	Was the content of the course related to your present job? (X = Yes)	Length of course (in hours)
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				

SUMMARY

[26-27] A. Total number of courses completed : |_|_|

[28] B. SENAI courses completed : |_|

[29] C. Related to present job : |_|

[30-33] D. Total number of hours : |_|_|_|_|

[34-37] E. Total nº of hours at SENAI : |_|_|_|_|

[38-41] F. Number of hours related to present jobs : |_|_|_|_|

7.1 Vocational training courses started, interrupted and/or not yet finished

Nº	Type of course	Still undergoing (X = Yes)	Name of school or institution organizing or which organized course	Was content of course related to your present job?	Number of study hours completed
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					

SUMMARY

A. Courses started/interrupted

42-43 a. Number of courses : |__|__|

44 b. Nº of SENAI courses: |__|

45 c. Related to present job : |__|

46-49 d. Total nº of hours : |__|__|__|__|

50-53 e. Nº SENAI hours : |__|__|__|__|

54-57 f. Nº of hours related to present job : |__|__|__|__|

B. Undergoing courses

58-59 a. Nº of courses : |__|__|

60 b. Nº of SENAI courses: |__|

61 c. Related to present job : |__|

62-65 d. Total nº of hours : |__|__|__|__|

66-69 e. Nº SENAI hours : |__|__|__|__|

70-73 f. Nº of hours related to present job : |__|__|__|__|

8. At what age did you start working ?

[74-75] |__|__| years

9. Counting from your first job, how long have you worked ?

[76-78] |__|__|__| months

Card |_B|
1

Questionnaire nº |3|_|_|_|_|_|_|_|_|
2 9

Level |__|
10

10. Describe your present employment :

[11-12] A. Present occupation/ status : |__|__| ______________________________

[13-20] B. SENAI classification : |__|__|__|__|__|__|__|__|

[21-22] C. Initial occupation/ status |__|__| ______________________________

[23] D. Was this occupation :
|__|_1| the same as your present one
|__|_2| related to your present, in production
|__|_3| related to your present but outside production
|__|_4| other occupation, in production
|__|_5| other occupation, outside production.

[24-26] E. Time in the firm |__|__|__| months

[27-29] F. Subordinates :
|__|_1| None
|__|_2| Yes. How many ? |__|__|

[30] G. Registered :
|__|_1| Yes, for present job
|__|_2| Yes, for other job
|__|_3| No

[31-32] H. Working week : |__|__| hours

[33-35] I. Monthly salary : |__|__|__| thousand cruzeiros

[36-37] J. How did you get to know of this job ?
|__|01| Knew the owner(s)
|__|02| Through someone working in the firm
|__|03| Through someone who knew firm or owner(s)
|__|04| Was working in firm which had business connections with this one

|__|05| Through announcement on firm gate
|__|06| Through newspaper/magazine advertisement
|__|07| Through employment agency
|__|08| Through Government employment agency (SINE, Labour Exchange)
|__|09| Through school or institution where underwent training
|__|10| Related to owner(s)
|__|11| Other way. Which ? ______________________

38 B. How did you secure the job ?
|__|_1| Practical test
|__|_2| Interview
|__|_3| Practical test and interview
|__|_4| Nothing. Only gave in documents requested
|__|_5| Other method. Specify : ______________________
____

11. Did you have other jobs before this one?

39-40 |__|_1| No (Move on to Q.16)
|__|_2| Yes. How many ? |__|

12. Describe the job you had just before this one.

41-42 A. Occupation/status |__|__| ______________________

43 B. Was this occupation
|__|_1| the same as your present one
|__|_2| related to your present one, in production
|__|_3| related to your present one, but outside product:
|__|_4| another occupation in production
|__|_5| another occupation, outside production.

44 C. Employment status :
|__|_1| Salaried worker of firm
|__|_2| Civil servant, military personnel
|__|_3| Family worker
|__|_4| Self-employed
|__|_5| Owner, partner
|__|_6| Other. Which ? ______________________

45-48 D. Industry : |__|__|__|__| ______________

49 E. Size of firm : |__|_1| Family business, no employees
|__|_2| Micro-firm (1-5 employees)
|__|_3| Small (5-99 employees)
|__|_4| Medium (100-499 employees)
|__|_5| Large (500 or more employees)
|__|_6| Not applicable, is not a firm (State, foundation, ecclesiastic)

50-52 F. Time worked : |__|__|__| months

13. Describe your first employment/job:

53-54 A. Occupation/status : |__|__| ______________________

55 B. Was this occupation : |__|_1| The same as present one
|__|_2| Related to present, in production
|__|_3| Related to present, but not in production
|__|_4| Another occupation, in production
|__|_5| Another occupation, in outside production.

56 C. Employment status : |__|_1| Salaried worker of firm
|__|_2| Civil servant, military personnel
|__|_3| Family worker
|__|_4| Self-emploved
|__|_5| Owner , partner
|__|_6| Other. Which ? ______________

57-60 D. Industry : |__|__|__|__| ______________

61 E. Size of firm : |__|_1| Family business, no employees
|__|_2| Micro (1-5 employees)
|__|_3| Small (5-99 employees)
|__|_4| Medium (100-499 employees)
|__|_5| Large (500 or more employees)
|__|_6| Not applicable, is not a firm (State, foundation, ecclesiastic)

62-64 F. Time worked |__|__|__| months

For those persons with no more than two previous employments prior to present one, move directly on to Q. 16.

447

14. Have you had any other employment or jobs in which you have worked longer than the two mentioned above ?

65 ☐ 1 No (Move on to Q. 16)
☐ 2 Yes

15. Describe this job/employment :

66-67 A. Occupation/ status ☐☐ ________________________

68 B. This occupation was :
☐ 1 The same as your present one
☐ 2 Related to present one, in production
☐ 3 Related to present one, but not in production
☐ 4 Other occupation, in production
☐ 5 Other occupation not in production

69 C. Employment status :
☐ 1 Salaried worker of firm
☐ 2 Civil servant, military personnel
☐ 3 Family worker
☐ 4 Self-employed
☐ 5 Owner, partner
☐ 6 Other. Which ? ____________________

70-73 D. Industry : ☐☐☐☐ ____________________

74 E. Size of firm :
☐ 1 Family business, no employees
☐ 2 Micro (1-5 employees)
☐ 3 Small (5-99 employees)
☐ 4 Medium (100 - 499 employees)
☐ 5 Large (500 and more employees)
☐ 6 Not applicable, is not a firm (State, foundation, ecclesiastic)

75-77 F. Time worked : ☐☐☐ months

78-80 16. How did you learn to perform your present occupation ? Up to three alternatives can be combined, numbering them from 1 to 3, by decreasing order of importance
☐ 1 At home, working in family business
☐ 2 On-the-job - in the present firm
☐ 3 On-the-job, in other firm
☐ 4 Course or training given by present firm
☐ 5 Course or training given by other firm
☐ 6 Course or training in school or specialized institution
☐ 7 Other.

16. (cont'd.)

Specify for any of the alternatives given above) : ______________

End of interview. Complete Question 17 on the basis of previous data collected.

17. Employment in which employee has worked longest

81

☐ 1 Present employment
☐ 2 The one just previous to present
☐ 3 First
☐ 4 Other

ANNEX F

OCCUPATIONAL STATUS SCALE

Methodology

The occupational scale used in this study was developed by SENAI in 1982 after research had been carried out to establish the social value of a given occupation. This was done by registering the opinion of professionals who, because of the nature of their jobs, regularly came into contact with employees at all levels. They were consequently well-qualified to give their opinion concerning several aspects of the labour market.

First, it was necessary to define the object of evaluation and single out what the interviewees were to comment on. The alternatives were: to work with a list of all existing occupations or with a list of occupational categories, dividing the above-mentioned occupations into groups.

It was decided to use the latter alternative because the large number of existing occupations would have made it virtually impossible to establish a hierarchy. A list of occupational subdivisions was then set up, based on previous studies concerning SENAI-SP graduates, as well as on bibliographical research.

Thirty-seven occupational categories were defined after having grouped together examples of frequently found, or so-called "typical occupations", under each heading. The most common occupations in the labour market were also listed under the same headings.

Next, the criteria by which the different occupational categories were to be measured were established on the basis of an extensive bibliography, and taking into account three basic variables: salaries, education and social prestige - inherent in the "typical occupations" of each category. The first two items, salaries and education, may be classified as "objective" socio-economic criteria, because they are based on real conditions within the labour market. The last item, social prestige, must be classified as "subjective", as it is based on social values. The subjective nature of this criterion is somewhat lessened because "prestige" is usually measured by very concrete limits such as earnings, degree of authority in one's job, educational background, etc.. In short, it is supposed that people usually attribute more prestige to an occupation when it pays more, entails more duties and responsibilities and/or requires more knowledge and skills to carry it out.

Next, a judgment sample of professionals to be interviewed was selected, all of whom had to have extensive knowledge of the labour market and/or experience in dealing with employees. Twenty-nine people were thus chosen, most of them working in the industrial sector or in the trade and services sector.

In selecting companies for this study, an effort was made to include industrial undertakings of different sizes and branches of activity. In the service sector, however, only large-sized companies were included: in smaller companies in this sector there is little division of labour or work specialisation, and their professionals rarely answered to the basic requirements mentioned above.

This process led to the establishment of a scale with 15 categories organised in ascending order of importance. These categories will be presented in detail, according to sector of activity, occupational level and specific category.

Source: Estudo com ex-alunos do CAI e CQPI - relatorio i CAI por Marcia de Lima SENAI-SP 1982 Op. cit.

Occupational status according to sector, occupational level and specific category

Major Sector	Occupational level	Specific Category	Status	Examples of occupation
Industry	Unskilled worker	Regular/incumbent	01	General help, porter
		Head of section/Supervisor of unskilled workers	03	
	Semi-skilled worker	Assistant	02	Presser, tractor driver, driver, weaver, cloth cutter, machinist
		Regular/incumbent	04	
		Head of a section/Supervisor of semi-skilled workers	06	
	Skilled worker	Assistant	03	Turner, fitter, milling-machinist mechanic, seamstress, cook
		Semi-regular	05	
		Regular/incumbent	06	
		Foreman, craftsman	07	
	Technician self-employed	Assistant trainee	06	Laboratory technician, quality supervisor, project designer, electric technician, chrono-analyst
		Regular/incumbent	08	
		Technician	09	
		Chief/manager	11	
	Professional	Assistant trainee	07	Engineer, chemist, technologist
		Regular/incumbent	11	
		Free-lance/self-employed	12	
		Chief/manager	12	
	Executive (cf. company size)	5-49 employees	08	Managing director, administrator, director (not limited to one branch or section)
		50-99 employees	10	
		100-499 employees	12	
		500 or more employees	14	
	Owner/partner	0-4 employees	08	
		50-99 employees	10	
		100-499 employees	12	
		500 or more employees	14	
Public works	Unskilled worker	Regular/incumbent	01	Construction worker
		Head of section/Supervisor of unskilled workers	03	
	Semi-skilled worker	Assistant	02	Bricklayer, cement mixer, plasterer
		Regular/incumbent	03	
		Self-employed	04	
		Head of section/Supervisor of semi-skilled workers	05	
	Skilled worker	Assistant	02	Stonemason, carpenter, plumber painter
		Regular/incumbent	04	
		Self-employed	05	
		Foreman, craftsman	06	
	Technician	Assistant trainee	06	Construction designer
		Regular/incumbent	08	
		Self-employed	09	
		Manager	11	

Occupational status according to sector, occupational level and specific category
(continued)

Major Sector	Occupational level	Specific Category	Status	Examples of occupation
Public works (cont'd)	Professional	Assistant trainee	07	Architect, civil engineer
		Regular/incumbent	11	
		Free-lance/self-employed	12	
		Chief/manager	12	
	Executive (cf. company size)	5-49 employees	08	Managing director, administrator, director (not limited to one branch or section)
		50-99 employees	10	
		100-499 employees	12	
		500 or more employees	14	
	Owner/partner	0-4 employees	08	
		50-99 employees	10	
		100-499 employees	12	
		500 or more employees	14	
Commerce/ Services	Unskilled worker	Regular/incumbent	01	Janitor, maid
		Head of section/Supervisor of unskilled workers	03	
	Unskilled employees	Regular/incumbent	03	Travelling salesman, street vendor, seller at an open air market, doorman, watchman, office boy, elevator boy, sales clerk, packer
		Head of section/Supervisor of unskilled employees	04	
	Skilled manual worker	Assistant	02	Typist, digit-typist, waiter, telephone operator, driver manicurist, butcher, xerox-machine operator
		Regular/incumbent	04	
		Self-employed	05	
		Foreman/Craftsman	06	
	Skilled non-manual worker (employee)	Assistant	04	Cashier or bank teller, clerk, stockroom clerk, billing clerk, receptionist
		Regular/incumbent	06	
		Self-employed)	07	
		Head of section/Supervisor	08	
	Specialised manual worker	Assistant	02	Cook, confectioner, hairdresser, barman, nursing assistant
		Regular/incumbent	05	
		Self-employed	06	
		Head of section/Supervisor	07	
	Specialised non-manual worker	Assistant	04	General cashier, secretary, seller, buyer, broker, dispatcher
		Regular/incumbent	06	
		Self-employed	07	
		Head of section/Supervisor	08	
	Technician	Assistant trainee	06	Elementary school teacher, technical salesman, programmer
		Regular/incumbent	08	
		Self-employed	09	
		Chief	11	
	Professional	Assistant trainee	07	High school and college level professor, male-nurse, systems analyst
		Regular/incumbent	11	
		Free-lance/self-employed	12	
		Chief/manager	12	

Occupational status according to sector, occupational level and specific category
(continued)

Major Sector	Occupational level	Specific Category	Status	Examples of occupation
Commerce/ Services (C'ntd)	Executive (cf. company size)	5-49 employees	08	Managing director, administrator, director (not limited to one branch or section)
		50-99 employees	10	
		100-499 employees	12	
		500 or more employees	14	
	Owner/partner	0-4 employees	08	
		50-99 employees	10	
		100-499 employees	12	
		500 or more employees	14	
Agri-culture	Worker	Regular/incumbent	01	Rural worker, crop-picker
		Agricultural supervisor	03	
	Administrator	Small farm	04	
		Medium-sized to large farm	06	
	Small farm owner (cf. outlet for most of produce)	Subsistence	03	Share-cropper, co-owner
		Market - no employees	04	
		Market - up to 5 employees	06	Aviculturist, horticulturist
	Farmer (owner of a larger farm)	5-49 employees	08	Cattle-owner, coffee producer
		50-99 employees	10	
		100 or more	12	
	Technician	Assistant trainee	06	Agricultural technician
		Regular/incumbent	08	
		Self-employed	09	
		Chief	11	
	Professional	Assistant trainee	07	Agricultural engineer
		Regular/incumbent	11	
		Free-lance/self-employed	12	
		Manager/chief	12	
Adminis-tration	Member of Council		08	
	Mayor		11	
	Municipal Secretary		10	
	State Deputy		11	
	Federal Deputy		12	
	Senator		14	
	Governor		15	
	Secretary of State		13	
	Minister		15	
	State Judge		14	
	Federal Judge/Public Prosecutor		15	
	Judge of the Court of Appeals		15	
Police	Prison warder		04	
	Policeman		04	
	Investigator/Detective		07	
	Notary		07	
	Examiner		09	
	Deputy		11	
Armed forces	Soldier		04	Corporal, soldier, sailor, sergeant, sub-lieutenant, lieutenant, captain, lieutenant colonel, major, colonel, general
	Sub-officer		07	
	Officer		10	
	Superior Officer/General		13	
Other	Artists and athletes		08	
	Regligious orders	Priest, parson		
		Bishop	10	
		Cardinal	13	

ANNEX G

LIST OF ABBREVIATIONS AND ACRONYMS

ABCD	Regions formed by the following municipalities in the Greater São Paulo area: Santo Adnré, São Bernardo do Campo, São Caetano do Sul and Diadema
ABINEE	Brazilian Association of electric and electronic industries
CAI	Industrial Apprenticeship Course
CAP	Further training and upgrading course
CEAG	Management Help Centre for Small and Medium-sized Companies
CEBRAE	Brazilian Support Centre for Small and Medium-sized Companies
CEP	Specialisation Course
CFMO	Federal Council for Manpower - Ministry of Labour
CGC/MF	General Taxpayers List - Ministry of Finance
CIESP	Industrial Centre for the State of São Paulo
CQP	Vocational training course
CTAE	Technical and Economic Centre for Entrepreneurial Assistance/UNICAMP
DECON	Economics Department/FIESP

DECAD - Documentation, Statistics, Surveys and Industrial Data Department/FIESP
DPEA - SENAI-SP Regional Department Division for Research, Study and Evaluations
DEPE - Department of Economics and Economic Planning of the Philosophy and Humanities Institute/UNICAMP
DEPROV - Productivity Department/FIESP-CIESP
EAP - Economically active population (Portuguese PEA)
EMP - Employees
ETFSP - Federal Technical School of São Paulo
FELCH - Philosophy, Literature and Humanities College
FIESP - Industrial Federation of the State of São Paulo
FIPE - Institute Foundation of Economic Research (former IPE)
GDP - Gross Domestic Product
HP - Craftsmanship (secondary technical course)
IPE - Institute of Economic Research (now called FIPE)
MVR - Greater Reference Value
PEA - Economically Active Population (EAP)
SENAC - National Commercial Training Service
SENAI-DN - National Industrial Apprenticeship Service, National Department
SENAI-SP - National Industrial Apprenticeship Service, Regional Department of São Paulo
SMC/SME - Small and medium-sized companies (Portuguese PME)
SMO - Occupational Method Series
TI - Industrial Training
UNICAMP - Campinas State University
USP - São Paulo University

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It is becoming more and more evident, both in developed and developing countrties, that the large industrial firms in the modern sector no longer help to absorb the manpower surplus which regularly floods the labour market; nor do they help in general to resolve unemployment problems.

At the other end of the spectrum, the traditional or informal sector of the economy is said to constitute a solution since it employs many people, and in particular the less-skilled workers. However, working conditions and salaries in this sector are far from being satisfactory. This is why small-scale firms which constitute, so to speak, an intermediate sector, have generated so much hope among economists and manpower specialists. They supposedly employ large numbers of people, use little equipment and few sophisticated machines, and yet elaborate and adapt technolgies relevant to their needs.

Very little is known about the relationship between education, training and work in the small-scale firms. This study, which is the result of co-operation between SENAI (Sao Paulo) and the IIEP, specifically sets out to analyze this problem.

First, it studies the role and place of small-scale firms in the Brazilian economy. Then, focussing on the industries in the city of Sao Paulo, it investigates how these small firms function and survive at a time of severe economic crisis—who are their managers and how are they trained. More specifically, it tries to analyze whether there is a relationship between the educational background and training of the managers of these firms and their performance in general. Finally, the study looks into the question of the personnel policies of these small firms and the sort of manpower they recruit, in order to draw some conlusions for educational and training policies.

The authors

Elencie Monteiro Leite is a researcher in the Division of Research Studies and Evaluation, SENAI, Sao Paulo.

Françoise Caillods, staff member of IIEP, has been associated with various research projects on educational financing and school location. She has also directed a project on the microplanning of education and another on the relationship between education, employment and work.